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Vol. XIX., No. 1

TORONTO, MAY, 1918

\$2.00 per Year

INDUSTRIAL CANADA



For any manufacturer or merchant who will give us reasonable consideration, we are willing to invest time and money to formulate advertising plans and develop ideas.

Two things only we ask: A definition of the prospect's advertising aims and his expectation of the time necessary to their fulfilment.

To illustrate: Occasionally a firm will invest two or three thousand dollars in a year's advertising (while the leaders in the industry are spending tens of thousands) and then wonder, before the year's advertising is completed, why the leaders haven't been backed off the map. They will then condemn advertising as a business force, and possibly include in their censure, the advertising agency that has served them faithfully and well.

To any firm, however, that has a due sense of the relation of advertising to their selling plans we (and some other advertising agents) can be very helpful. Ask us to send an executive to see you.

J. J. GIBBONS, LIMITED

General Advertising Agents

MONTREAL

Cables—Gibjay, Toronto

TORONTO

WINNIPEG

Codes—ABC, 5th Edition

**PUBLISHED BY THE CANADIAN
MANUFACTURERS ASSOCIATION**

HEAD OFFICE

BRANCH OFFICES

TORONTO

MONTREAL, HAMILTON, WINNIPEG, VANCOUVER, HALIFAX, QUEBEC



FOR POLISHING USE CORALOX

(AN ELECTRIC FURNACE CORUNDUM)

000

Ask us for Free Trial Sample

Made in Canada

D. A. BREBNER LIMITED, HAMILTON, ONT.

AUTOMOBILE PARTS

DROP FORGINGS



HC
111
I4
V.19
no. 1-6

We have erected and are now operating

THE LARGEST COMMERCIAL DROP FORGE PLANT IN CANADA

We are equipped to handle large forging contracts.
This expansion also increases our stamping facilities.
We stand by our motto: Quality and Service.

SHEET METAL WORK

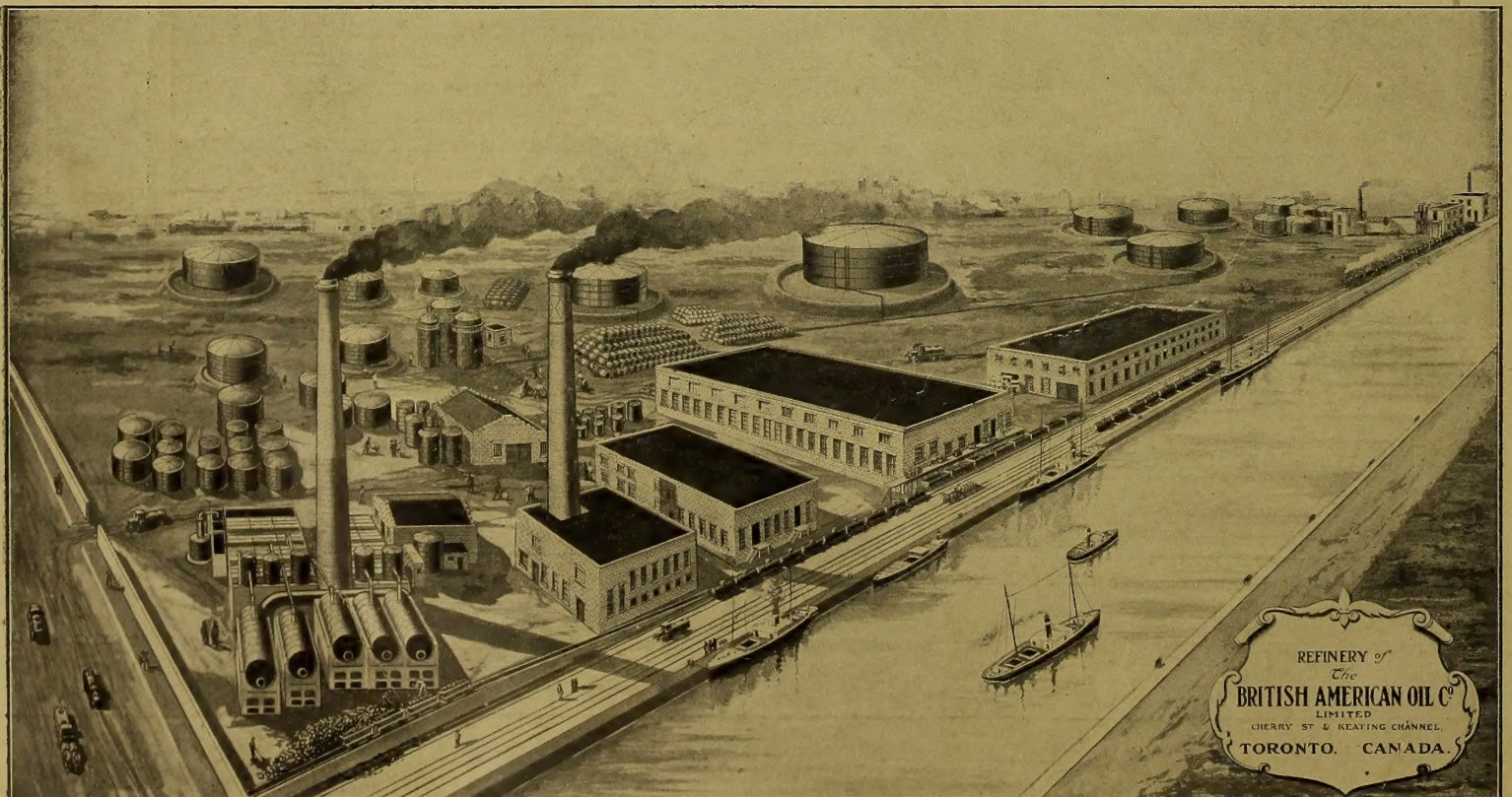
GENERAL STAMPING

DOMINION FORGE & STAMPING CO.

Waltham, Mass.

ED

THE BRITISH AMERICAN OIL CO., LIMITED



Head Office: ROYAL BANK BUILDING, TORONTO

Branches: Montreal, Ottawa, London, Windsor, Etc.

When writing advertisers, please mention INDUSTRIAL CANADA

Facts and fancies do not always agree, but——

We fancy Dart Union Pipe Couplings are about right! 30 odd years' successful service would almost make it a fact.

Do you agree? Your dealer sells them.

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FROM 1888 TO 1918

is all the time there is in the Electrical Business.

CROCKER-WHEELER Motors, Generators, and Transformers are built by a Company that has made good continuously since 1888.

Write to our nearest office for Bulletins on Induction Motors and Transformers.

The Canadian Crocker-Wheeler Company Limited

Manufacturers and Electrical Engineers

Head Office and Works :
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District Offices :
MONTREAL, QUE. TORONTO, ONT.

An efficient intercommunicating telephone system linking up all departments of your business will pay dividends in time saved and trouble avoided.



The Presto - Phone Automatic Telephone System is ideal—no central operator required, no complicated equipment, low cost of installation, practically no maintenance cost.

THE PRESTO-PHONE

Canadian Automatic Telephone System

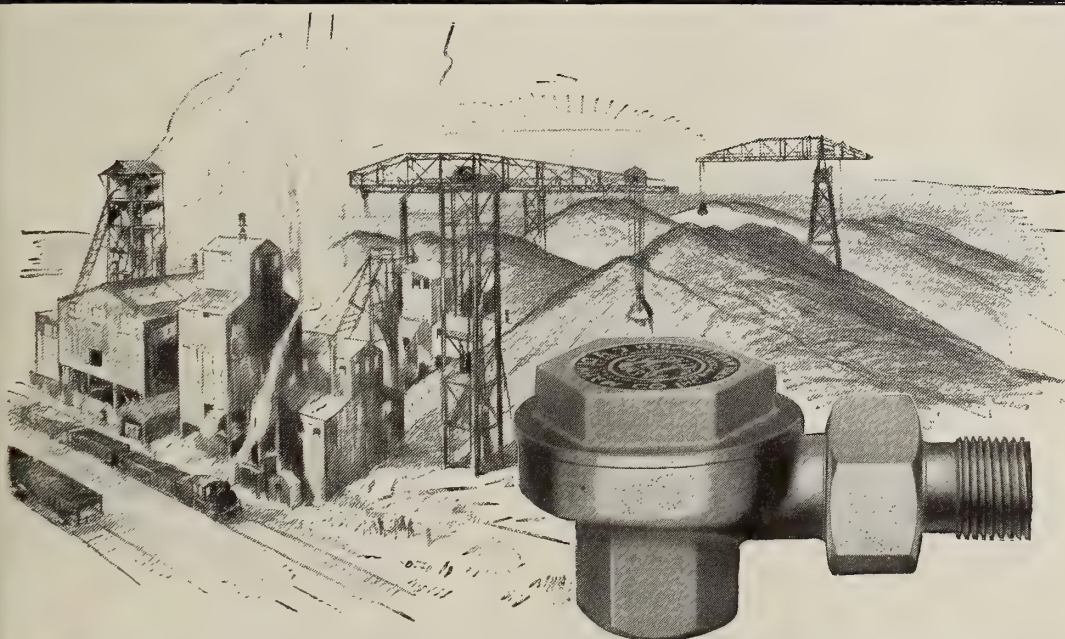
A distinctive advantage of the Presto-Phone System is the fact that it has no connection with your outside lines, consequently parties telephoning you from outside are never held up by any conversation taking place between parties inside.

WRITE FOR DESCRIPTIVE BOOKLETS

Canadian Independent Telephone Co., Limited

263 ADELAIDE STREET W.

TORONTO



The Guardian of the Coal Pile

Save coal! Save coal! Save coal! is the clarion call that is being sounded all over Canada. The National coal supply is endangered. War needs and individual requirements are taxing it to the limit. Something must be done—and at once. No longer can we depend, as formerly, upon the United States for coal. They themselves need a hundred million tons of coal more than they did last year. Increased production can only supply fifty million more tons. **THEY MUST SAVE THE OTHER FIFTY MILLIONS.**

Canada is confronted with the necessity of conserving coal. We must save coal wherever possible. We must make the coal we have go **TWICE AS FAR.**

The DUNHAM
HEATING SERVICE

C. A. DUNHAM CO., Ltd.
TORONTO, CANADA

Branch Offices: Halifax, Montreal, Ottawa, Winnipeg, Vancouver, Calgary
Branches in Principal Cities in U. S.

Office buildings, factories, apartments, homes—all can and should share in this saving. Many industrial plants and a surprisingly large number of homes and apartments are doing so by Dunhamizing their present equipment. The installation of Dunham Radiator Traps in many cases is all that is necessary. The fuel saving the first winter often pays for the expense involved.

Here is a way to save coal and still be comfortably warm even in the severest weather.

The Dunham Heating Service, the foundation of which is the Dunham Radiator Trap pictured above, gets every last bit of heat out of the coal. This trap is situated at the outlet side of each and every radiator. It automatically allows the air and water to escape and **KEEPS IN THE HEAT.** Right at the place where, in ordinary heating systems most coal is wasted—many, many pounds of coal are saved for DUNHAM Heating Service users.

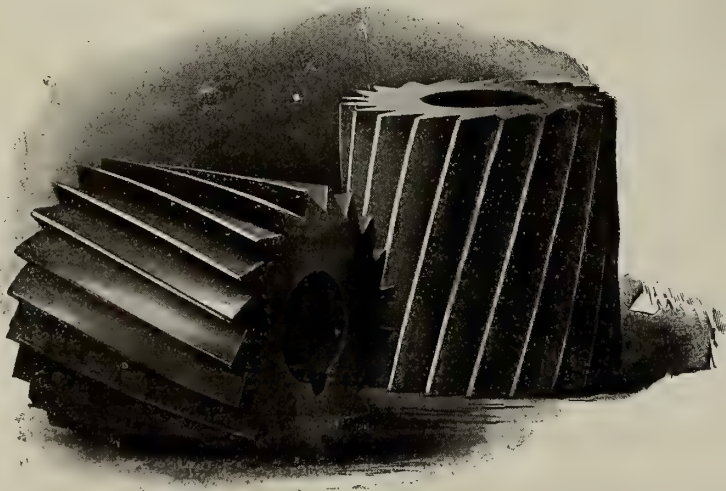
How about you? Are you burning too much coal and not getting sufficient heat? Consider this very thoughtfully. It is your duty, now when coal is so urgently needed for War purposes—when coal wasted means additional suffering—to find out if your factory, office or home is heated efficiently. Ask a responsible heating contractor to examine your present heating system. Ask him about Dunham Heating Service. Inquire at most any modern equipped building and you will find a "Dunham System." Ask US how YOUR present heating equipment can be Dunhamized.

Write us—telling about your heating troubles. Our engineering service department will give your problem careful attention.

SMALL TOOLS

MILLING CUTTERS

In High Speed or Carbon Steel



Plain Side Convex
Concave Angular
and
Special Forms

Special Inserted
Blade Cutters

Our tools are manufactured from the best materials procurable, by skilled workmen with most modern equipment.

QUALITY GUARANTEED

Prompt service is assured at our nearest store, where P. & W. Small Tools are stocked for immediate delivery.

Write for Our No. 9 Catalogue

PRATT & WHITNEY CO.
of Canada, Limited
Dundas - Ontario

MONTREAL
723 Drummond Bldg.

TORONTO
1002 C.P.R. Bldg.

WINNIPEG
1205 McArthur Bldg.

VANCOUVER
B.C. Equipment Co.

BERTRAM

MACHINE TOOLS

For Structural, Bridge and Shipbuilding Plants

Modern in design and built for heavy service, our line embraces a varied equipment of Punches, Shears, Bending and Straightening Rolls, Coping Machines, Rotary and Plate Planers.

The assistance and advice of our engineers are yours for the asking.

THE JOHN BERTRAM & SONS CO., Limited

Dundas - Ontario - Canada

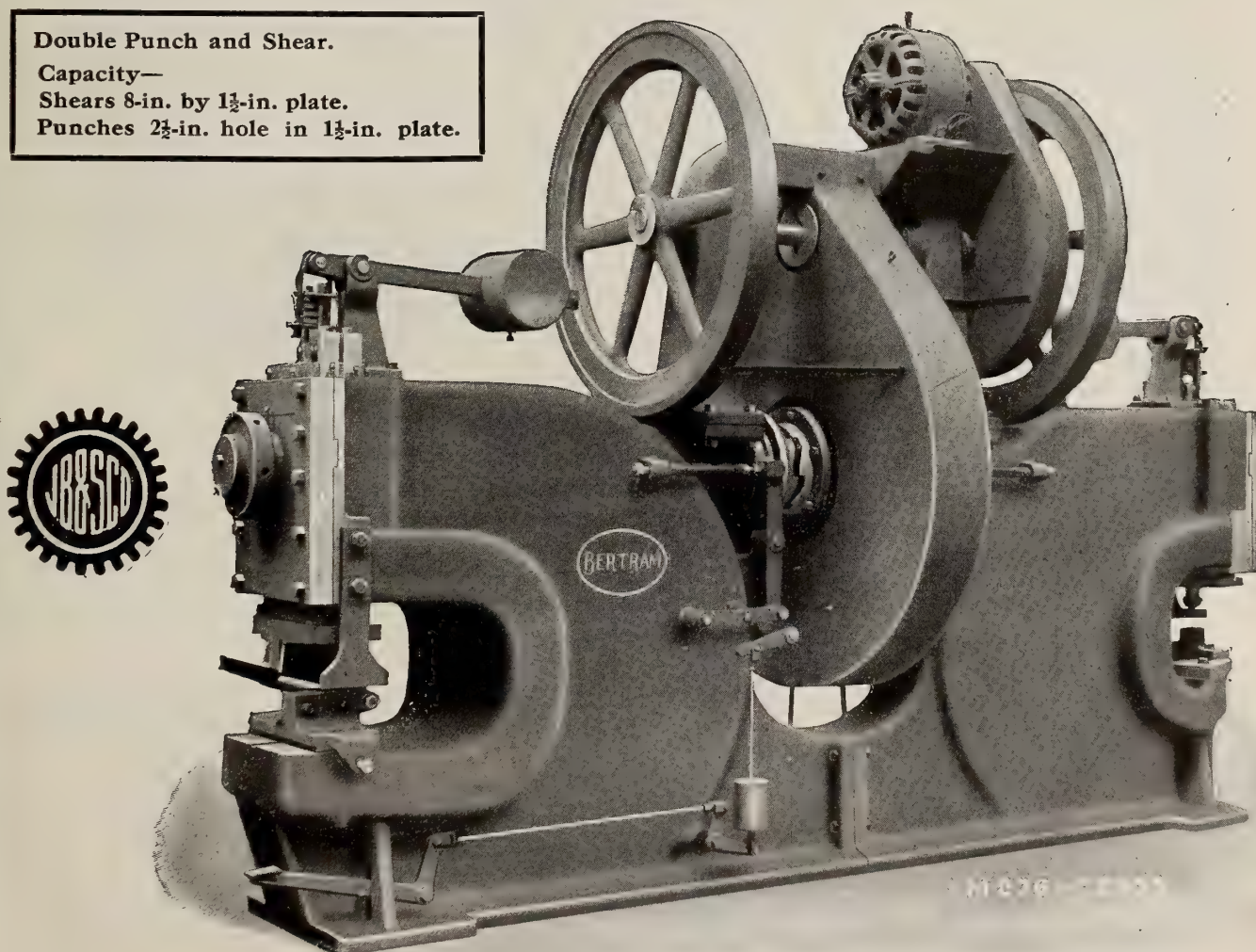
MONTREAL
723 Drummond Bldg.

TORONTO
1002 C.P.R. Bldg.

WINNIPEG
1205 McArthur Bldg.

VANCOUVER
609 Bank of Ottawa Bldg.

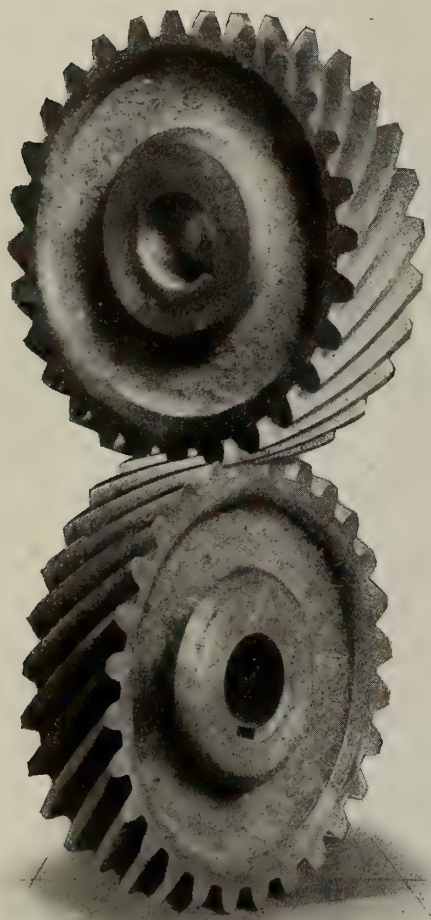
Double Punch and Shear.
Capacity—
Shears 8-in. by 1½-in. plate.
Punches 2½-in. hole in 1½-in. plate.



HELICAL CUT GEARS



Large Sizes or Small—
Any Material



Cut accurately
by experts

Get Our Quotations

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Van Horne Street - TORONTO

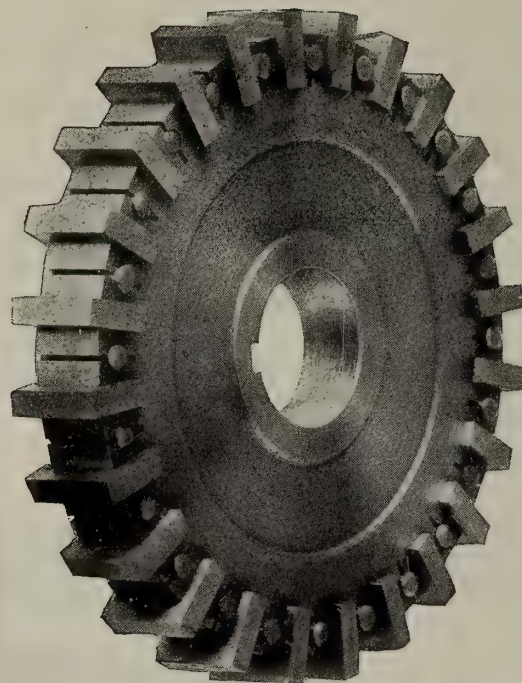
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MILLING CUTTERS

*We can supply these made up under
your own specifications either with
inserted blades or welded.*

**A Marvel of Economy
and Effectiveness**



Inserted Blade Type

*When the STELLITE blades become under-
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return them to us and receive \$2.00 per
pound for them, which will reduce consider-
ably the cost of new blades.*



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Limited

Head Office and Works :
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200 King St. West

Montreal
315 Craig St. West



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There is no such thing as untidiness in the stock-room when you are equipped with MEADOWS SHELVING. It is easy to keep slow-moving stock in sight and your turnover will be much quicker.

Our schedule of prices for shelves, uprights and backs will enable you to figure the cost of your installation. Send for it.

THE GEO. B. MEADOWS
TORONTO WIRE, IRON & BRASS WORKS CO
LIMITED
TORONTO ————— CANADA

When writing advertisers, please mention INDUSTRIAL CANADA

Oxy-Acetylene Welding and Cutting



Cutting $\frac{3}{8}$ -inch Sheet Steel Piling (including lock joints $2\frac{1}{4}$ inches thick) by the Prest-O-Lite Process

One Man Does the Work of Two In Less Time, At Less Cost

This illustration shows one man, with a Prest-O-Lite blowpipe, cutting $\frac{3}{8}$ -inch Sheet Steel Piling, used in the construction of the protection piers of a large draw bridge.

This one man handled the entire job, cutting an average of seven feet of piling per hour—an enormous saving over the old slow and costly method of sawing, which required the services of two men.

Prest-O-Lite
PROCESS

offers splendid opportunities for substantial savings in manufacturing, construction and repair work.

Prest-O-Lite Oxy-Acetylene Welding and Cutting is opening the way to construction and repair operations which cannot be performed by any other process.

Employs both gases (acetylene and oxygen) in portable cylinders. Prest-O-Lite Dissolved Acetylene is backed by Prest-O-Lite Service, which insures prompt exchange of full cylinders for empty ones. Provides dry, purified gas, insuring better welds, quicker work and lower operating cost.

Thorough instructions are furnished free to every user of Prest-O-Lite Dissolved Acetylene. Any average workman who understands metals can learn the process quickly and easily. There is practically no line of metal manufacturing or repairing in which oxy-acetylene welding has not already established itself firmly as standard routine method.

Write for valuable illustrated literature and data on work others are doing by Prest-O-Lite Welding Process. It may point out ways to solve your problems. Address Dept. C-104.

THE PREST-O-LITE CO., INC.

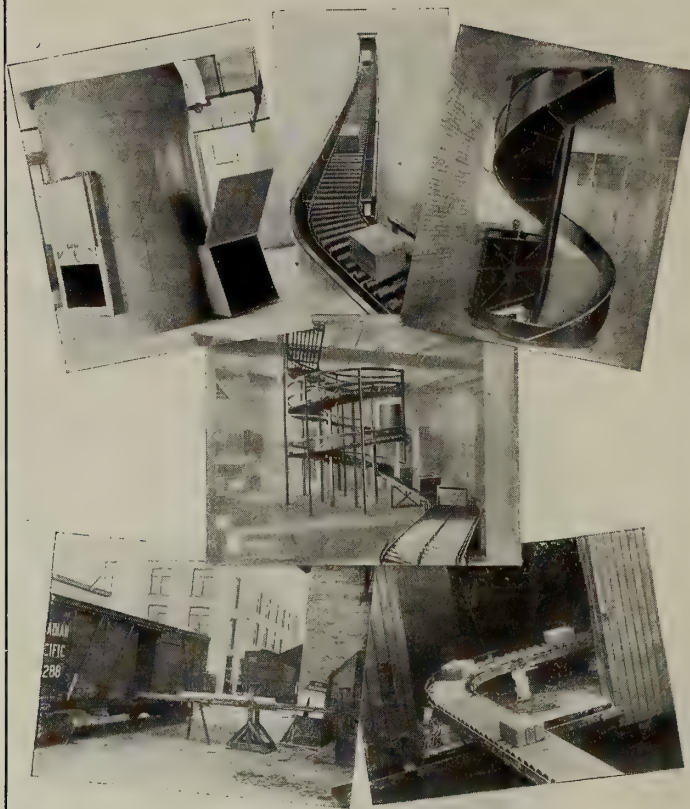
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Prest-O-Lite Building
Corner Elm Street and Centre Avenue
TORONTO

Direct Factory
Branches:
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Merritton, Ont.
Winnipeg, Man.

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Merritton, Ont.
St. Boniface, Man.
Shawinigan Falls,
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World's Largest Makers of Dissolved Acetylene



For Full Information Write for Catalog I
Canadian Mathews Gravity Carrier Co., Ltd.
484 Richmond St. West, Toronto, Ont.

Standard Clay Products Limited

MANUFACTURERS OF

Salt Glazed, Vitrified Sewer and Culvert Pipes

4 inch to 30 inch

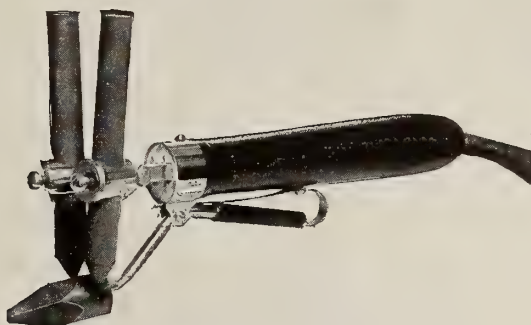
Square and Round Flue Linings,
Inverts, Building Blocks

Fire Clay Stove and Range Bricks,
Locomotive Arch Blocks

And All Shapes in Fire Clay

FACTORIES AT
ST. JOHNS, P.Q., and NEW GLASGOW, N.S.

THE NEW ELECTRIC SOLDERING IRON



The new era of economy and efficiency in rapid and thorough soldering has been opened with the advent of the J. C. Electric Soldering Irons.

The J. C. Electric Soldering Tools give instant, continuous conducted heat and give it faster than it can be taken away by the metal on which it is used.

Instantaneous heat and stay hot.

Runs the solder in 30 seconds or less.

Save time. Are saving from 40% to 70% time in plants where these irons are in use.

Save labor. Do not require skilled help.

Increase production. Lessen the cost.

They can't burn out, because there is nothing to burn out, and the only maintenance cost is for carbons.

These are the fastest, most efficient, and most economical electric soldering irons on the market.

Light in weight. Rugged in construction.

Easy to manipulate. Low cost of operation.

WRITE FOR ILLUSTRATED CATALOGUE

**The Clemens Electrical Corporation of Canada
LIMITED**

Hamilton - Ontario

FIGURE YOUR COSTS CAREFULLY

Spend just a few minutes with your pencil, and you will realize that the returns on your fuel and equipment investment can be surprisingly increased with a MOREHEAD "Back to Boiler" SYSTEM. Every heat unit in your steam represents so much coal—so much cold cash. The

Morehead Back to Boiler SYSTEM

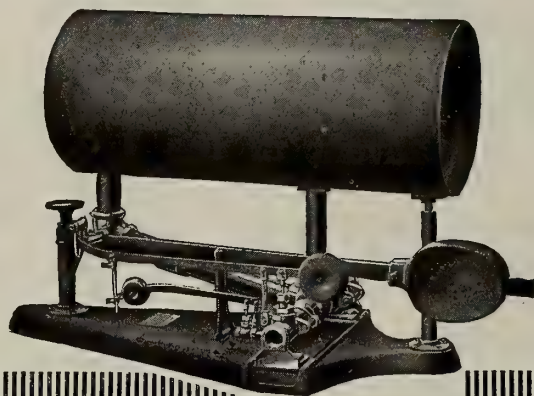
enables you to get full use of every one of these heat units. The Morehead System takes every ounce of condensed moisture from your steam lines and returns it to the boiler—without waste—automatically. The operation is 90% cheaper than a

pump can do it—and the condensation is 100 to 150° hotter.

If you want the very best method of handling condensation—interest yourself in the MOREHEAD SYSTEM.

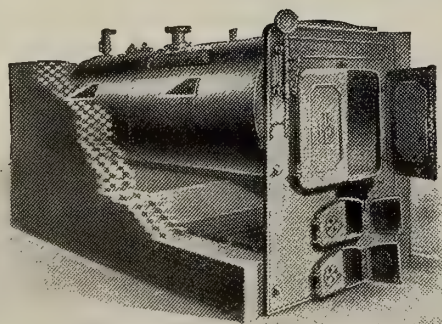
Canadian Morehead Manufacturing Company

DEPT. "K" - WOODSTOCK, ONTARIO

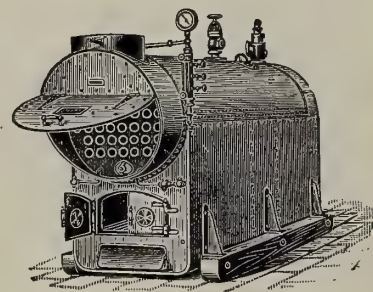


E. Leonard & Sons, Limited

LONDON . . . ONTARIO



Manufacturers of
**BOILERS
ENGINES**
of all types and sizes



□□

BRANCHES AT

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Box 1315, Calgary, Alta.
62 Water Street, St. John, N.B.
567 Banning Street, Winnipeg, Man.
Vancouver Machinery Depot,
Vancouver, B.C.

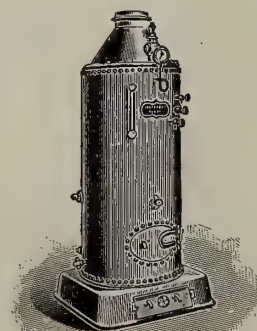
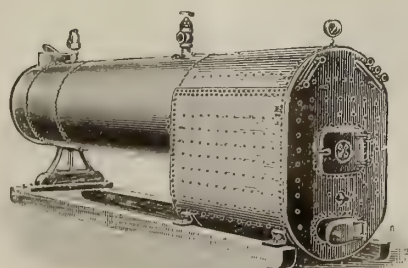




Fig. 300



Fig. 106



Fig. 108

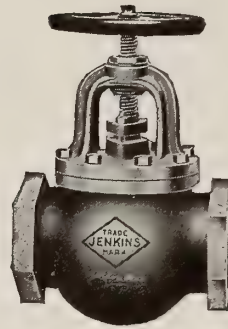


Fig. 141

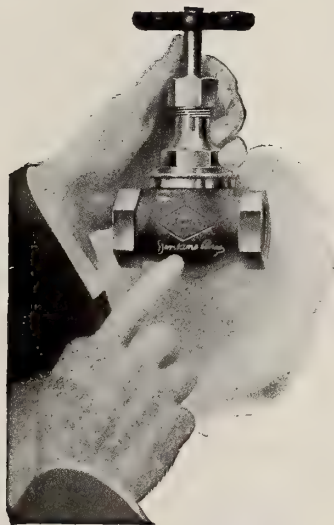


Fig. 402

Where dependability is necessary, and where every dollar counts, will be found plant equipment of quality. In the power plants of buildings with International reputations—buildings that are National institutions—in plants that are indispensable links of the World's industry—will be found equipment installed and maintained on a quality basis, because—quality equipment is a permanently paying investment. In these plants and buildings, as in thousands of others,

JENKINS BROS.' VALVES

ARE TO BE FOUND
RECOGNIZED AS QUALITY EQUIPMENT
BY FOREMOST ENGINEERS



REGISTERED TRADE-MARK

*The Diamond Trade-Mark—Your Protection when Buying
Look for It*

CATALOGUE No. 8 FREE ON REQUEST

JENKINS BROS.
LIMITED

Head Office and Works :
103 St. Remi Street
MONTREAL, CANADA

Agencies in All the Principal
Countries of the World

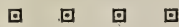
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FOR
ELECTRO PLATING
DEEP DRAWING QUALITY
ACCURATE GAUGE AND WIDTH
WE SOLICIT YOUR ENQUIRIES

MANUFACTURED BY
STANLEY STEEL CO., LTD.
Hamilton, Canada

Mackinnon, Holmes & Co., Limited
Mackinnon Steel Co., Limited
Sherbrooke, Quebec, Canada

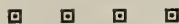


Fabricators and Erectors of

Structural Steel and Steel Plate Work

of every description

Buildings, Bridges, Penstocks,
Towers, Tanks, Roof Trusses,
Columns



Our engineering staff is always at your service.
If you have a problem--let us help you solve it.



SERVICE

That is not idle words.

QUALITY

That is second to none.

*This is all we have to offer—
could we offer more?*

VICTOR SAW WORKS, Ltd.

HAMILTON - ONTARIO

"CRANES MADE IN CANADA"



**Electric
Traveling
Cranes**

HAND POWER TRAVELING CRANES
ELECTRIC HOISTS, AIR HOISTS, FOUNDRY EQUIPMENT

Northern Crane Works, Limited

-

-

-

-

Walkerville, Ontario

Trifles That Make Perfection

Walking through our shops, a visiting buyer said casually, "What is the reason for putting such a brilliant finish on that shafting? I have noticed in several instances that you seem to spend time and labor upon little finishing touches that don't mean much, considering that the equipment is going into plants where nobody pays particular attention to looks."

Our Superintendent replied: "Your point is well taken and appreciated, but the reason for those finishing touches is this: From the time the raw material comes in to the time that the finished product is shipped out, we insist upon every process being completed to a point where that process represents perfection.

"We know that this extra effort will not be apparent to the eye of the buyer, but the difference in time occupied in turning out a commonplace job and one which has the touches which make for excellence is infinitesimal compared with

the ultimate result in the efficiency of the final product.

"Then there is another effect that is possibly not apparent to you, and that is this:

"The standards to which we work make our men take a greater pride in their jobs, for we may be old-fashioned in some respects, but we still like to imbue our men with the spirit of pride in perfect craftsmanship.

"What's the result? We get good work. We can afford, and do pay wages above the average. Consequently, Dodge Power Transmission Machinery has secured and maintains a reputation that is a credit to Canadian industry, and it enjoys a goodwill amongst buyers that no money could buy."

The buyer replied: "I understand now why Dodge has become synonymous with efficient power transmission machinery."

DODGE

Manufacturing Co., Limited

TORONTO : : ONTARIO

And 770 St. Paul Street West (Haymarket Square), Montreal

CANADA'S LARGEST BUILDERS OF TRANSMISSION MACHINERY



Dunlop "Gibraltar RedSpecial" Belting



Abnormal Friction Pull vs. Elasticity of Friction

BETWEEN every ply of specially-selected, heavy Cotton Duck in Dunlop "Gibraltar RedSpecial" Belting is a layer of pure Rubber which, through a Dunlop calendering process, so permeates the fabric that it binds the several plies into one integral piece.

Some belt manufacturers offer to sell their product on the basis of "Heavy-Poundage in Friction-Pull" Test. To obtain the latter result it is not necessary to secure such an expensive Rubber Friction as is used in "Gibraltar RedSpecial." This fact alone ought to be a pretty good gauge of the value of the "friction-pull" test.

In buying "Gibraltar RedSpecial" you get the advantage of years of careful laboratory work on our part with this result: The friction is of that "just-right" elastic quality which allows for the give and take necessary in rounding the pulleys; hence the reason "Gibraltar RedSpecial" is known for maximum Power, Speed and Service.

Note the Short Grain Rubber Friction

This Belt Section illustrates a Heavy "Poundage-Pull" Friction. To secure this result the Friction Grain is short and stiff. Elasticity and Flexibility have been sacrificed to secure such a result.

Note the Long Grain Rubber Friction

Dunlop "GIBRALTAR REDSPECIAL" has a Friction of Special Dunlop Rubber that retains its life indefinitely. "Note the long grain Rubber Friction," as illustrated. Elasticity has not been sacrificed for Abnormal Friction Pull.

UNLIMITED capacity for service is an intrinsic quality with Dunlop "Gibraltar RedSpecial" Belting. The success of nearly a quarter of a century in the manufacture of Rubber Products is built into Gibraltar. The original Made-in-Canada Red Rubber, Frictioned Surface Belting, "Gibraltar RedSpecial" has stood the infallible test of time in turning the wheels of industry in a multitude of Canadian plants from the Atlantic to the Pacific.

The Dunlop Unreserved Guarantee

If you have a difficult drive anywhere in your factory drop a line to our Head Office, or to our nearest branch, and we will send a man experienced in belt engineering to consider your requirements. If it is an instance where the "Gibraltar" Belting may be suitably employed we will recommend its use; and we will stand behind our recommendation with the fullest guarantee ever issued by a firm producing rubber products.

Dunlop Tire & Rubber Goods COMPANY LIMITED

MAKERS OF

High-grade Tires for Automobiles, Motor Trucks, Bicycles, Motorcycles, Carriages;
High-grade Rubber Belting, Packing, Fire Hose, and General Hose, Dredge Sleeves,
Military Equipment, Mats, Tiling, Heels and Soles, Horse Shoe Pads,
Cements and General Rubber Specialties.

D 30

HEAD OFFICE AND FACTORIES: TORONTO

Branches: Victoria, Vancouver, Edmonton, Calgary, Saskatoon,
Regina, Winnipeg, London, Hamilton, Toronto, Ottawa,
Montreal, St. John, Halifax.



Are Real Coal Savers

BECAUSE :---

THEY burn cheap fuel—and less of it.

- “ give complete and smokeless combustion.
- “ feed the fuel to the furnace with the doors shut.
- “ do not require skilled firemen.
- “ maintain a brilliantly hot fire.
- “ are simple, strong and beautifully made.

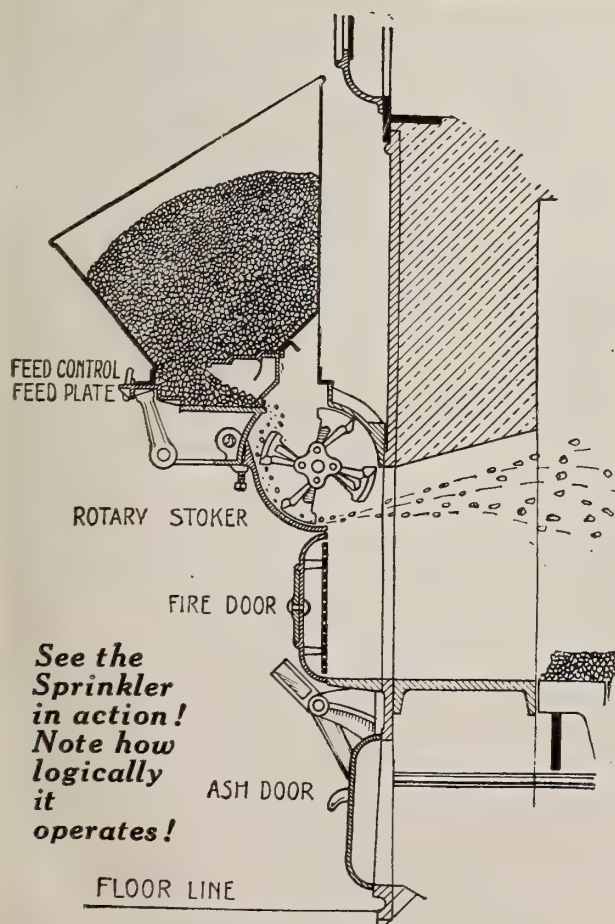
A FEW USERS OF THE GALT STOKER—ASK THEIR OPINION OF IT

New Royal Bank Building	-	Toronto
(Highest in British Empire)		
Hinde and Dauch Paper Co. of Canada, Ltd.	-	Toronto
Macdonald Manufacturing Co., Ltd.	-	Toronto
Dominion Power and Transmission Co., Ltd.	-	Victoria Ave., Hamilton
Board of Education	-	Hamilton, Ont.
Lister Estate Co., Ltd.	-	Hamilton, Ont.
Municipal Hospital	-	Morley Ave., Winnipeg
Toronto Carpet Manufacturing Co. Ltd.,	-	Toronto

Send for one of our Combustion Engineers to look over your plant—No obligation.

Have You Our Stoker Catalogue ?

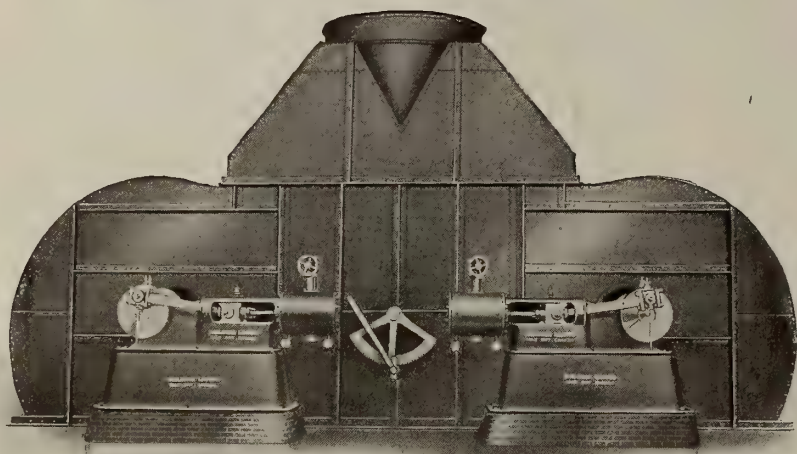
Galt Foundry Co., Limited - Galt, Ont.



See the Sprinkler in action! Note how logically it operates!

The Galt Sprinkler Stoker automatically feeds and uniformly spreads the fuel to the furnace in a light continuous stream and gives a perfectly level fire, 3 to 4 inches thick.

SHELDON EQUIPMENT FOR YOUR POWER PLANT



Let us tell you how to cut your coal bill.
Our systems are installed from Coast
to Coast.

We can make prompt deliveries on :---

Fans	Steam and Oil
Blowers	Separators
Exhausters	Exhaust Heads
Heaters	Back Pressure
Engines	Valves
Air Washers	Pressure
Steam Traps	Regulators
Etc.	Etc.

We supply apparatus for plants of all sizes, from
the smallest to the largest.

SHELDONS LIMITED
GALT, ONTARIO, CANADA

SALES OFFICES.

Sheldons Limited, - - - 505 Kent Bldg., Toronto
Ross & Greig, - - - 412 St. James St., Montreal
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Gorman, Clancey & Grindley, Ltd., Calgary & Edmonton

"BEATTY"

Material Handling
Plant has back of it
55 years of success-
ful experience.

HOISTING ENGINES
STEEL DERRICKS

DIPPER
DREDGES
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DERRICK
IRONS
SUCTION
DREDGES
etc.



Write us for Catalogue 21 and Prices

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**Steel Shipbuilders
Engineers and Boilermakers**

STEEL STEAMERS

Tugs, Scows and Dredges, Marine
Engines and Boilers.

STATIONARY BOILERS

Horizontal and Water Tube Type
Stacks, Tanks, Water Flumes.

SPECIAL MACHINERY

Estimates given on all kinds of special
Machinery.

REPAIR WORK

Given prompt attention.

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Esplanade St. East, Toronto*

ATKINS

STERLING QUALITY SAWS



Assurance of the best results, both economic and productive, is found in the constant use of **Atkins Sterling Quality Saws.**

Steel of exceptional quality — that never varies — and the best workmanship has perfected these universally used saws.



Are your results as good as they should be? Try **Atkins Saws** and watch the improvement.

Send for our "C.L." Catalog containing items of interest to you.



E. C. ATKINS & CO., Inc.

Established 1857

MAKERS OF STERLING QUALITY SAWS

Factory : Hamilton, Ont.

Vancouver Branch : 109 Powell Street

Ormsby



NEW FIREPROOF FACTORY, AMERICAN CAN COMPANY. BEING ERECTED BY NORCRSS BROS. CO.
N. M. LONEY, NEW YORK, ENGINEER.

Better Working Conditions Lower Fire Rates

The modern ideal of a factory built for efficiency is best carried out by the use of Ormsby Products.

In the fine factory illustrated above thought was first given to creating the best working conditions,—a bright, sunlit plant, a cheery, well-ventilated and healthy workshop. To combine these features with the utmost in fire protection and the lowest insurance rate Ormsby products were the logical choice.

Our contract for supplies included:—

- Ormsby Lupton Steel Sash.
- Ormsby Steel Partitions.
- Ormsby Rolling Steel Fire-Doors.
- Ormsby Counterbalanced Elevator Doors.
- Ormsby Kalameined Doors.

To any one interested in factory building we will be glad to send full information, details of construction, specifications and blue-prints of modern Ormsby Products.

THE A. B. ORMSBY COMPANY, LIMITED, TORONTO, ONT.

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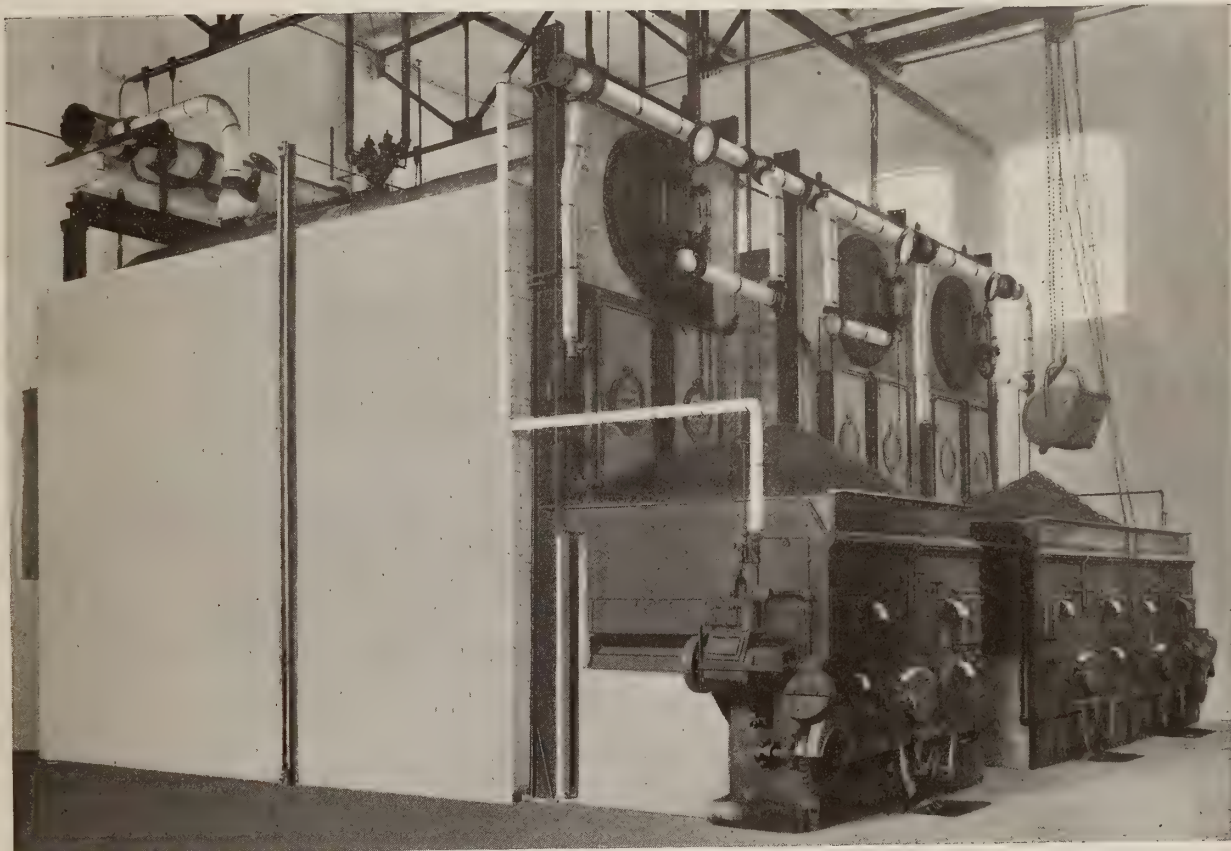
British Columbia: A. T. Chambers, Vancouver.

Associated with The Metal Shingle & Siding Company, Limited.

Factories at:—Preston, Toronto, Montreal, Winnipeg, Saskatoon, Calgary.

POWER EQUIPMENT

BUILT TO MEET YOUR OWN REQUIREMENTS



The Boiler Room of The Robson Leather Co., Ltd., at Oshawa, Ont. Equipped with three G. & McC. Co. Single Drum Type "B" Sectional Water Tube Boilers

G. & McC. Co. Engines and Boilers

will provide your plant with

A Continuous and Economical Service

We Build

Horizontal and Vertical Steam Engines; Steam Turbines; Return Tubular and Water Tube Boilers; Heaters; Tanks; Stacks; Pumps and Condensers; Transmission Machinery; Safes, Vaults and Vault Doors.

We shall be glad to supply Photographs, Catalogues, etc., on request.
Consult our Engineering Experts about your Power Problems

THE GOLDIE & McCULLOCH CO., Limited

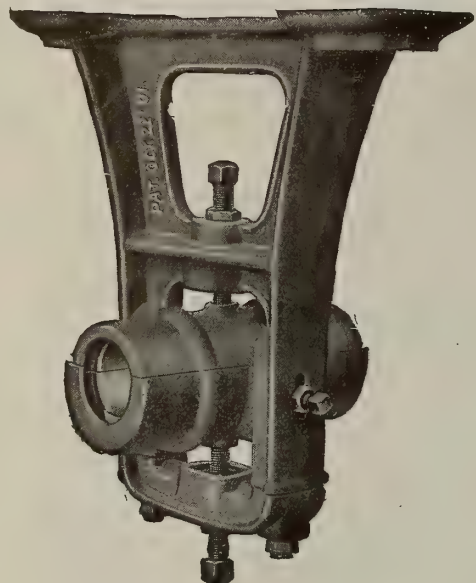
Head Office and Works: GALT, ONTARIO, CANADA

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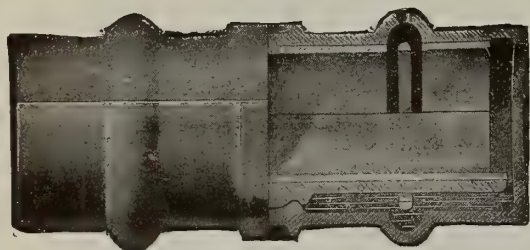


Bond Hangers Are the Best

Anyone that has used them will tell you that. They cut the danger of hot bearings to a minimum because they are equipped with an up-to-date and efficient ring oiling device that keeps the bearings constantly oiled, without wasting oil. The reservoir once filled requires no attention for at least six months. Any misalignment in the shaft line is easily corrected by the universal adjustment.

Our catalog on Power Appliances is full of pointers. Send for it to-day.

Ring-Oiling Device



**Canadian Bond Hanger &
Coupling Co., Limited**

ALEXANDRIA - ONTARIO

THE JONES UNDERFEED STOKER

The installation of a Jones Under-feed Stoker under your boiler means immediate and permanent fuel savings varying from 15% to 25%.



MADE
IN
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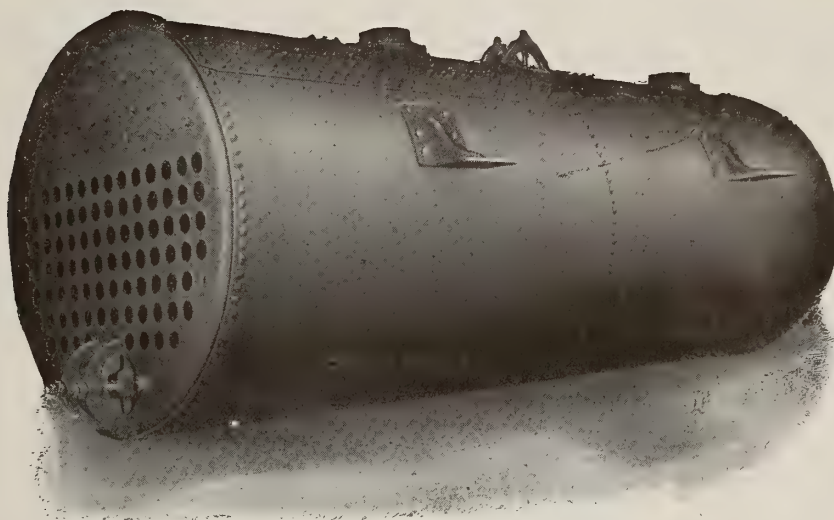
Perfect combustion is accomplished by automatic control of both coal and air. No unburned or half-burned coal, no soot, no smoke.

Descriptive Booklet
Mailed on Request

Jones Underfeed Stoker Co., Limited

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STANDARD RETURN TUBULAR BOILER

We make boilers of all kinds for any service.

We are also sole Canadian makers of Erie City Water Tube Boilers, Vertical and Horizontal.

The large number of pleased and satisfied owners of "INGLIS" Boilers is our best advertisement.

For (52) fifty-two years our boilers have been the standard. We have installations of our different types of boilers, which our representatives will be pleased to show to prospective purchasers. Write us for prices, etc.

INGLIS' PRODUCTS ARE "MADE-IN-CANADA"

The John Inglis Company, Limited

ENGINEERS AND BOILERMAKERS

14 Strachan Avenue

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Ottawa Representative: J. W. ANDERSON, 7 Bank Street Chambers

Grey Iron Castings

HEAVY OR LIGHT

Estimates promptly furnished. High-grade grey iron castings up to 30,000 lbs. Modern foundry fully equipped. Address enquiries to nearest office

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710 C.P.R. Building, Toronto
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GARLOCK PACKINGS



Are designed for every class of service where packing is required in power plants and on locomotives and steamships. They have been the accepted standard of the world for more than thirty years.

In the manufacture of our packings we have steadily insisted upon the best of everything in material, design and workmanship. All our efforts have been directed toward improving and perfecting our packings to meet the continual increase in steam and hydraulic pressures, due to the wonderful improvements of modern machinery.

Our factories, devoted exclusively to the manufacture of our packings, are the largest, most modern and best equipped in the world, and the locations of our numerous branch factories and stores are such as to afford the greatest advantage in serving our customers promptly.

We are exclusive packing manufacturers—we make nothing else.

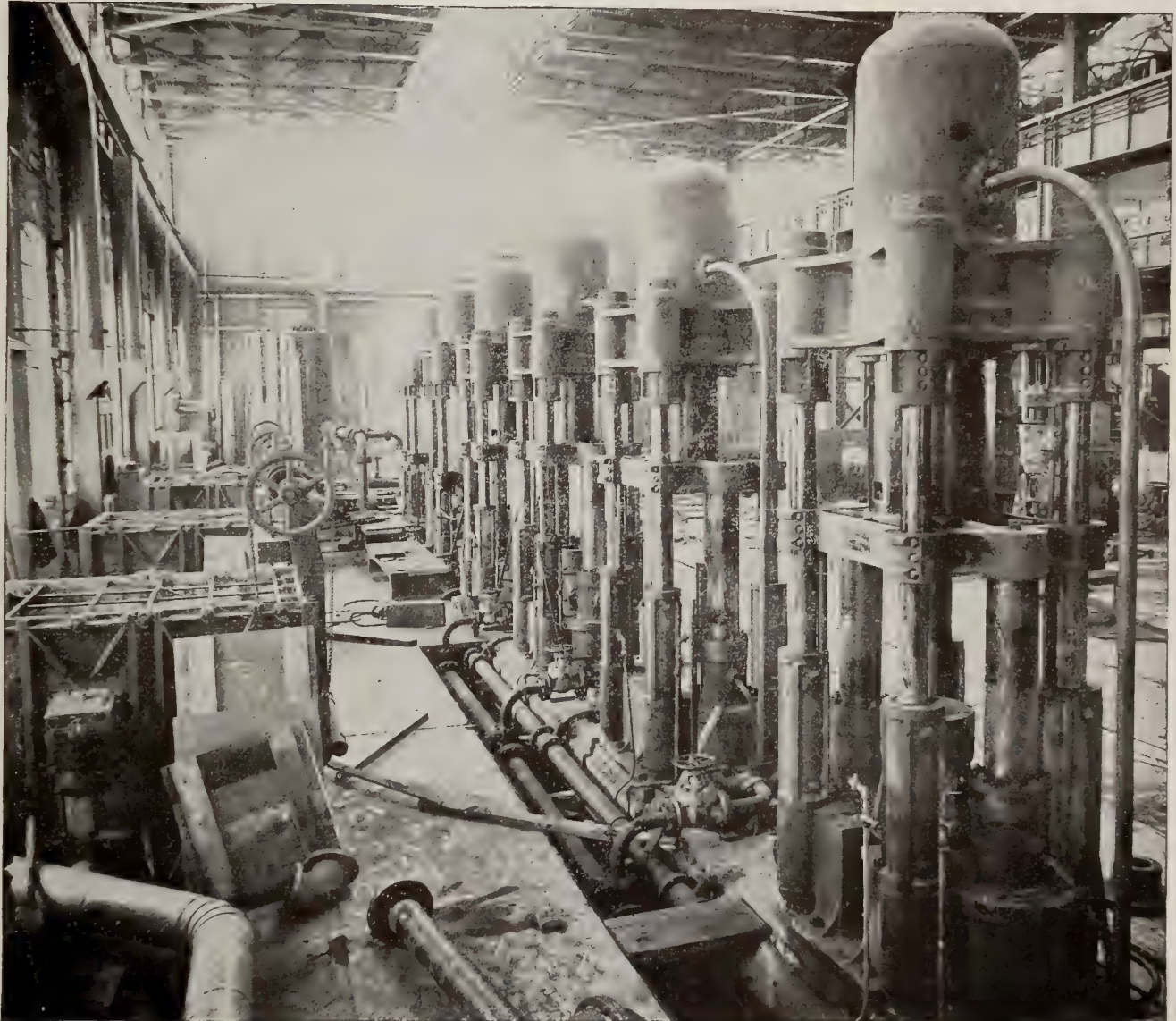
The Garlock Packing Company - Hamilton, Ontario

Branches:

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350-Ton Hydraulic Forging Press, for Six-inch Shells



ONE OF OUR MANY INSTALLATIONS

**HYDRAULIC AND POWER PRESSES, PUMPS,
ACCUMULATORS, VALVES AND FITTINGS**

Our skilled engineers are at your service to help work out your pressing problems. A good concern to do business with.

THE HYDRAULIC MACHINERY CO.
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Canadian Carbide

Made in Canada

SOLD THE WORLD OVER

Second to None in

QUALITY, GAS YIELD
AND PACKAGE

Works:

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Que.

MANUFACTURED BY

Canada Carbide Company, Limited
MONTREAL - CANADA

SAVED BY OXY-ACETYLENE WELDING



All the parts shown in illustration were reclaimed by Oxy-Acetylene Welding, and prove in no uncertain manner the value of the Process for restoring valuable and indispensable parts of machinery to use again that would otherwise be of value only as scrap.

The reclamation of the Motor Case of Locomotive Crane alone represented a saving of \$150, to say nothing of the incidental loss that might have resulted through inability to replace it immediately.

There are many similar uses for the Process in your industry which would undoubtedly have a distinct influence on your profits and production. Write for particulars.

The Pioneers of the Process
Throughout the World

L'AIR LIQUIDE SOCIETY

Manufacturers of Oxygen Dis-
solved Acetylene and all
Requisites for the Process

CANADIAN FACTORIES:

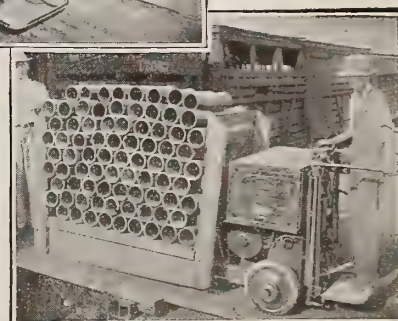
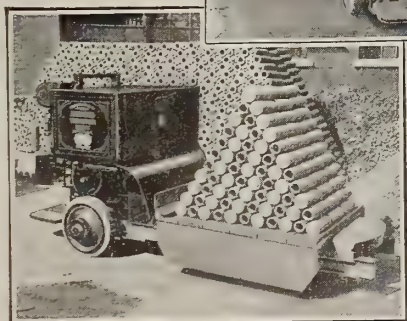
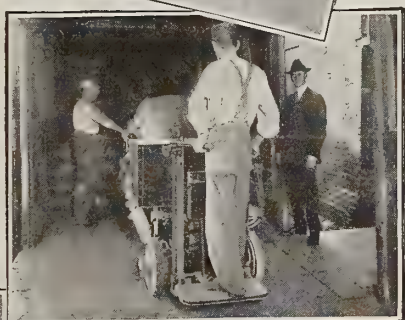
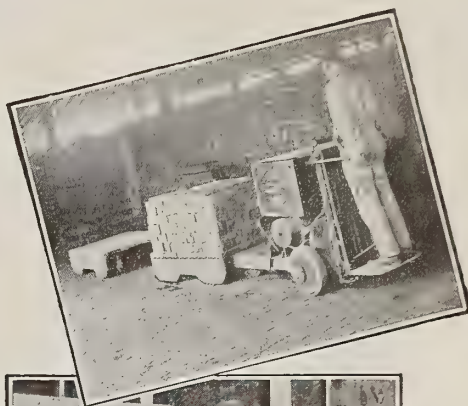
TORONTO

MONTREAL

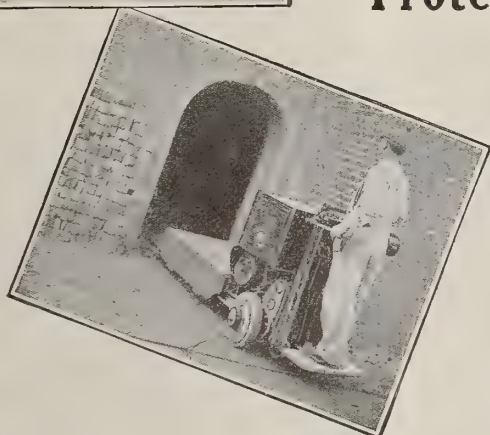
WINNIPEG

HALIFAX

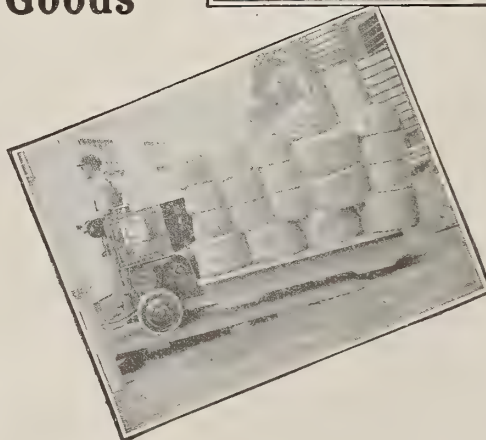
AUTOMATIC STORAGE BATTERY INDUSTRIAL TRUCKS



Relieve Congestion
Speed Up Production
Protect Your Goods



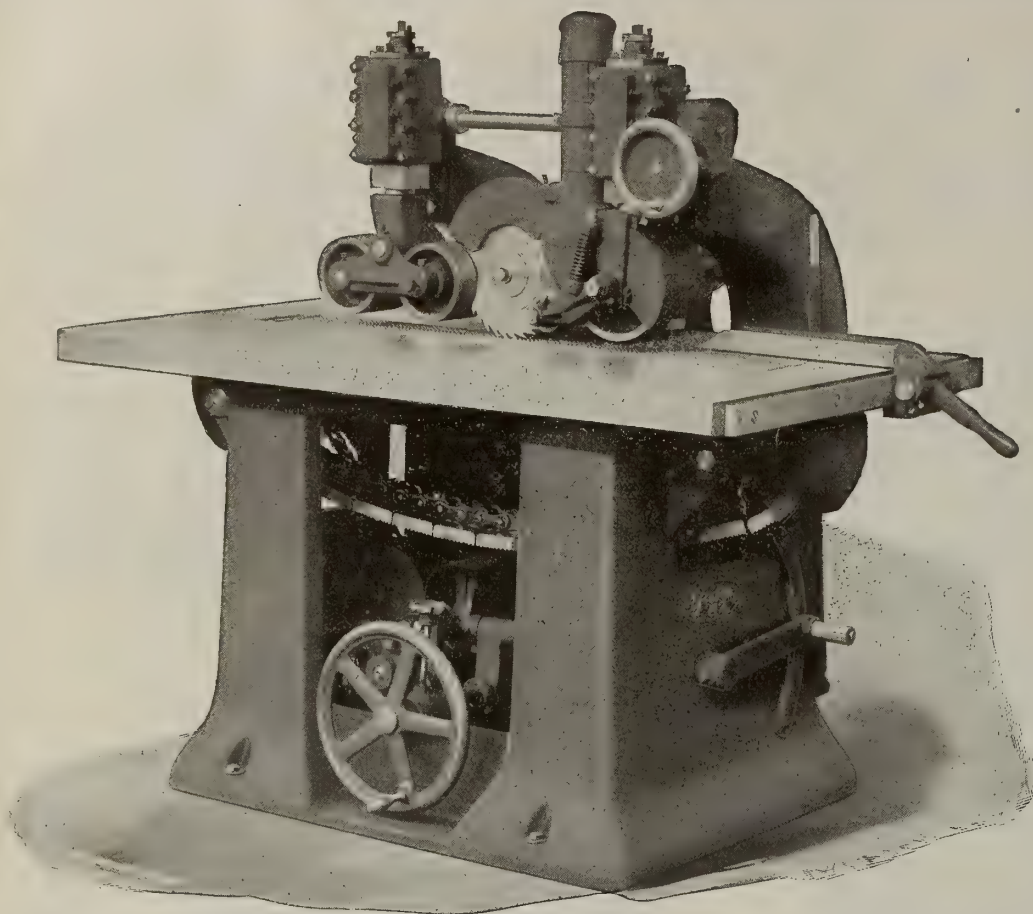
*We
Have a
Truck
for
Every
Purpose*



The Canadian Fairbanks-Morse Co., Limited

"Canada's Departmental House for Mechanical Goods"

St. John, Quebec, Montreal, Ottawa, Toronto, Hamilton, Windsor, Winnipeg
Saskatoon, Calgary, Vancouver, Victoria



*Type G-2
Edging
and
Ripping
Saw*

*The Saw
That Saves*

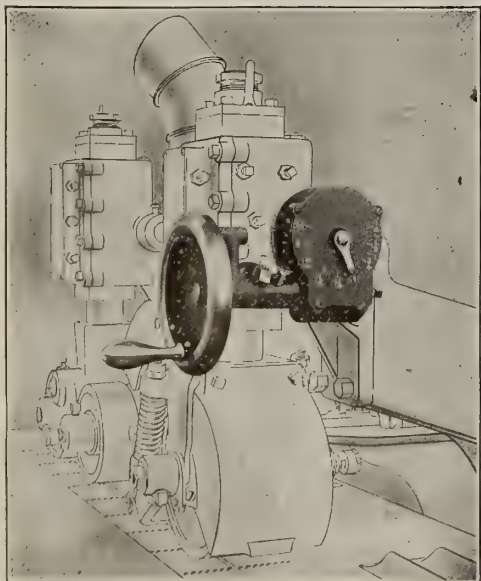
It saves upkeep expenses because it is built to last. Every part is constructed over-strength.

It saves labor because it needs little attention besides feeding the stock. It will do the work of five or six men with less modern equipment.

It saves time because all controlling devices are at operator's finger tips.

It saves grades because cheaper grades can be utilized by edging close to wane edges and defective centres.

It saves space because it only occupies $4\frac{1}{4}$ x 5 feet of floor space, and is readily adapted to motor drive.

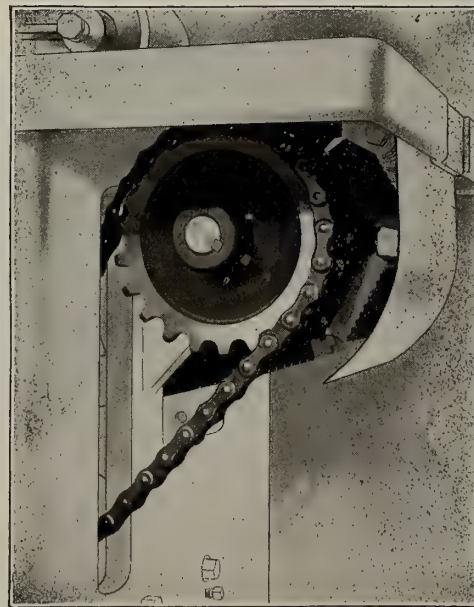


Section showing convenience of set works dial and hand wheel. This dial indicates thickness of stock to be run.

Send for our circular G-2, which describes and illustrates this saw in detail. It will tell you how to erase your edging and ripping worries. It is free, and involves no obligation. Just request a copy on your letter head.

*P. B. Yates
Machine Co.
Beloit, Wis.*

Canadian Plant, with
Offices,
HAMILTON, ONT.



Section showing travelling bed driving mechanism. Consists of heavy sprocket operated by roller-bearing chain.



SCREWS AND NUTS

 **ALL standard sizes
and threads, CAP
and SET SCREWS,
Plain and Castellated NUTS,
IN STOCK**

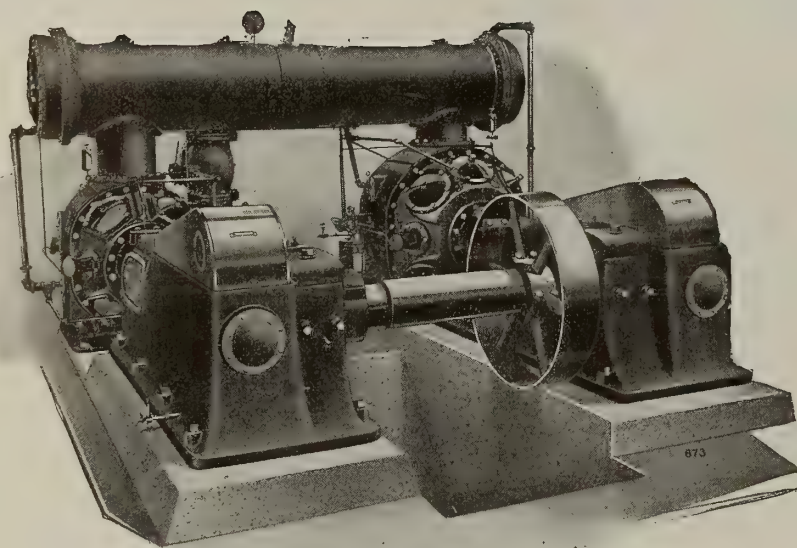
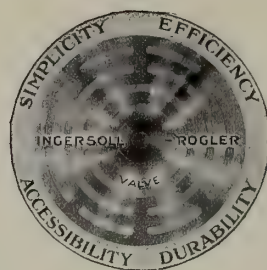
Special Screw Machine Work in
sizes up to $2\frac{1}{4}$ " diameter, $10\frac{1}{2}$ " long,
"Made to specifications."

Quotations on your
samples or blue prints.

THE NATIONAL ACME
DE COURCELLES MONTREAL
& G.T.R.R. **COMPANY.** CANADA

Ingersoll-Rogler

Air Compressors Provide More Air Per H.P. Input



P-R-E (Power Rogler Electric)
Air Compressor, Driving End. This view shows well the massive construction
and all enclosed, dustproof frames.

From 1500 cu. ft. up our compressors are provided with the Ingersoll-Rogler air inlet and discharge valves. These valves with their low lift, lightness, and lack of complicated mechanism are specially adapted for high-speed service. Their simple construction means long life and economy of power.

OTHER FEATURES:

Incoming air thoroughly insulated by water jacketing.

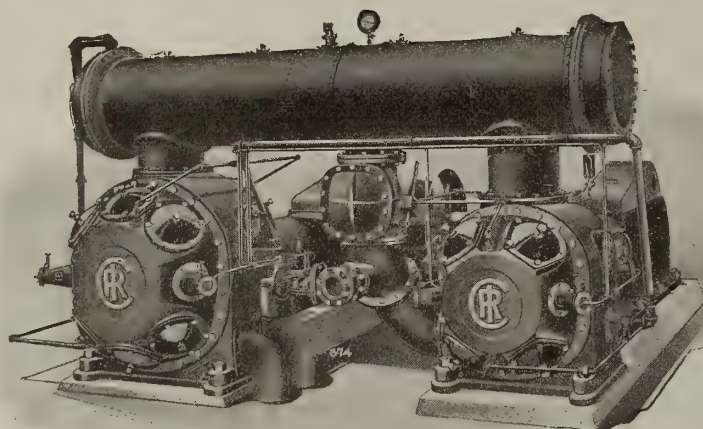
Complete accessibility.

Flood lubrication.

Efficient intercooler with moisture trap.

Automatic Clearance Controller.

Special attention is drawn to the clearance regulator stop which can be locked to prevent the compressor being operated at higher maximum load than desired. This valuable feature improves the load-factor when running at less than full capacity and lowers charges for electric power by keeping down the "peaks."



P-R-E Air Compressor, Air End, showing large intercooler. (CRV-1)

Canadian Ingersoll-Rand Co., Limited

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SLOTTERS



BUILT IN SIZES 11", 15", 18" AND 24"

The C.M.C. Slotters combine strength and rigidity with convenience of operation and have all modern improvements.

Complete descriptive bulletin No. 4122 sent upon request.

Sold direct and by all leading machinery dealers.

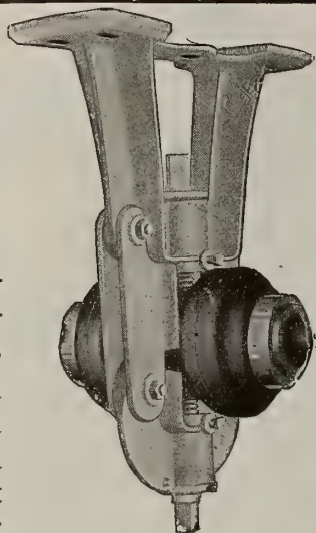
CANADA MACHINERY CORPORATION
LIMITED

GALT - ONTARIO

Toronto Office and Warerooms, Brock Ave. Subway

YOUR BIT

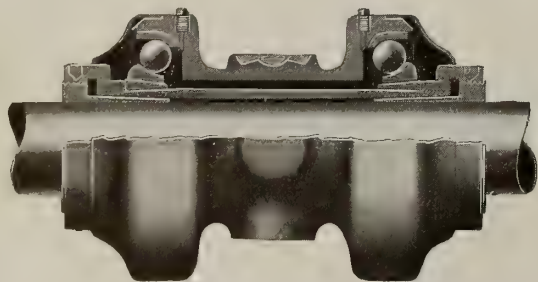
You have probably invested in Victory Bonds, and contributed to the Red Cross. Perhaps you are economizing in many ways also; but there is still another way to help—save power.



Chapman Double Ball Bearings

save 20 per cent. of power by eliminating friction. If you are wasting power in transmission, you are wasting coal—one of the articles the Government requests us to conserve.

It is not necessary to shut down your plant to install Chapman Bearings. They are interchangeable with self-oiling bearings of the same shaft size, and power is not the only thing they save.

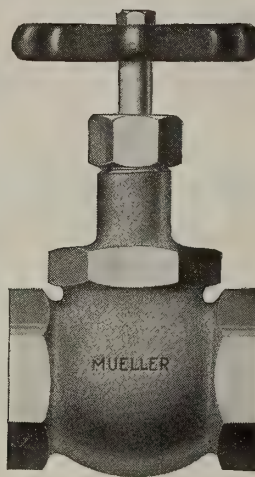


Let Us Tell You More About Them

CHAPMAN DOUBLE BALL BEARING CO., Limited

337-351 Sorauren Avenue, Toronto
408 Shaughnessy Building, Montreal

Transmission Ball Bearing Co., Inc.
1050 Military Road, Buffalo, N.Y.



MUELLER

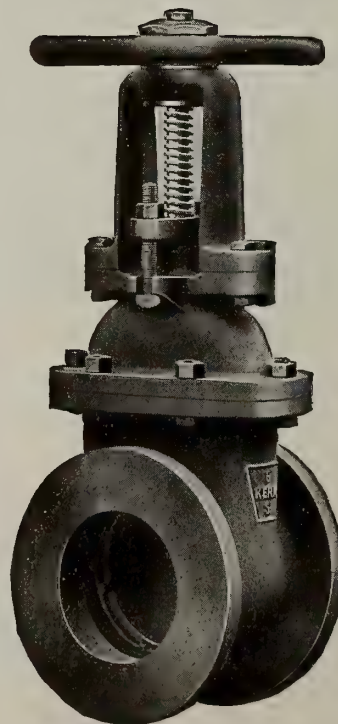
GLOBE AND ANGLE VALVES

Globe and Angle Valves, with an even thickness of metal throughout; valves that can be repacked under pressure both open and closed. The pipe threads are full length. The valves contain full sized water ways, and are cast from steam metal of our own special formula.

MUELLER Globe and Angle Valves are compact and embody all the most practical and desirable features. These are positively the highest grade valves on the market to-day.

H. Mueller Mfg. Co. Ltd.
SARNIA, ONT., CANADA

Kerr Iron Body Gate Valves

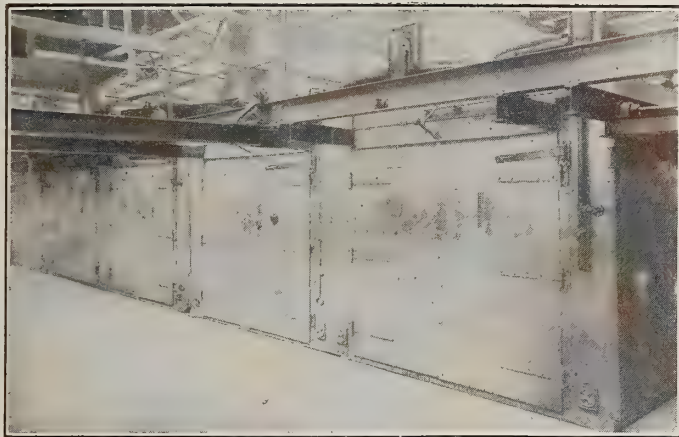


embody all that is modern in gate valve construction. Strong, compact and pleasing in appearance.

Every valve tested and guaranteed.

THE KERR ENGINE CO., Limited
Valve Manufacturers :: Walkerville, Ontario

INDUSTRIAL HEATING BY ELECTRICITY

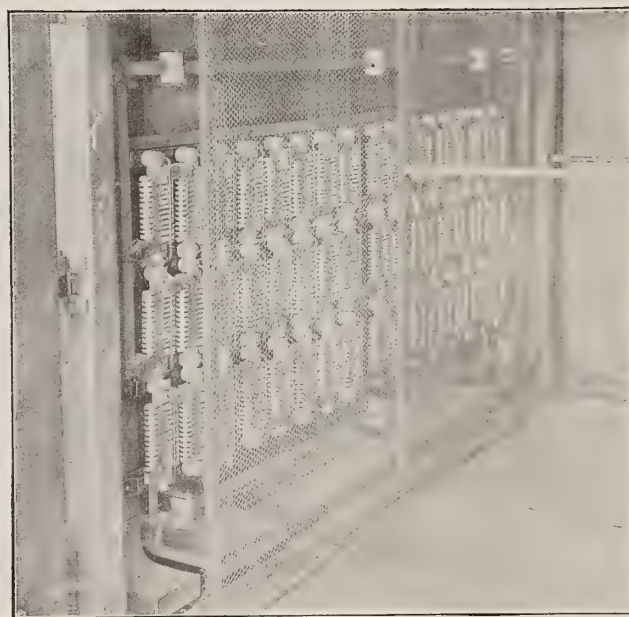


Exterior View of Ovens Installed at the Canada Cycle and Motor Co., Weston

The Canadian General Electric Company offers a complete line of industrial heating equipment suitable for every phase of the industrial world where relatively high temperatures are required, or where exact control of those temperatures is, above all other things, necessary.

The resistor material in G-E heaters is capable of enduring a continuous heat of 800° C. (1472° F.). It is carried on insulating material which maintains its insulating qualities at 1000° C. (1832° F.) with no expansion or contraction.

Central stations which have investigated and developed electric heating installations on their line are assured of a continuous and profitable load.



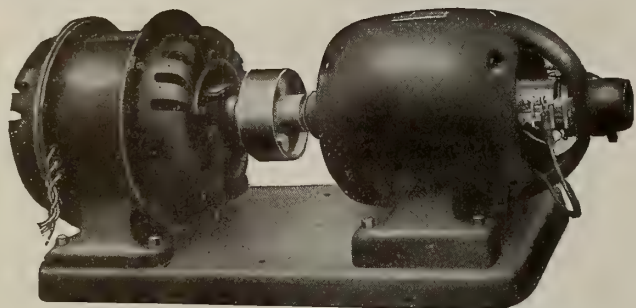
Showing Compact Installation of Heaters, Canada Cycle and Motor Co., Weston

Write to Our Nearest Office for Bulletin 48709

**CANADIAN GENERAL ELECTRIC CO.
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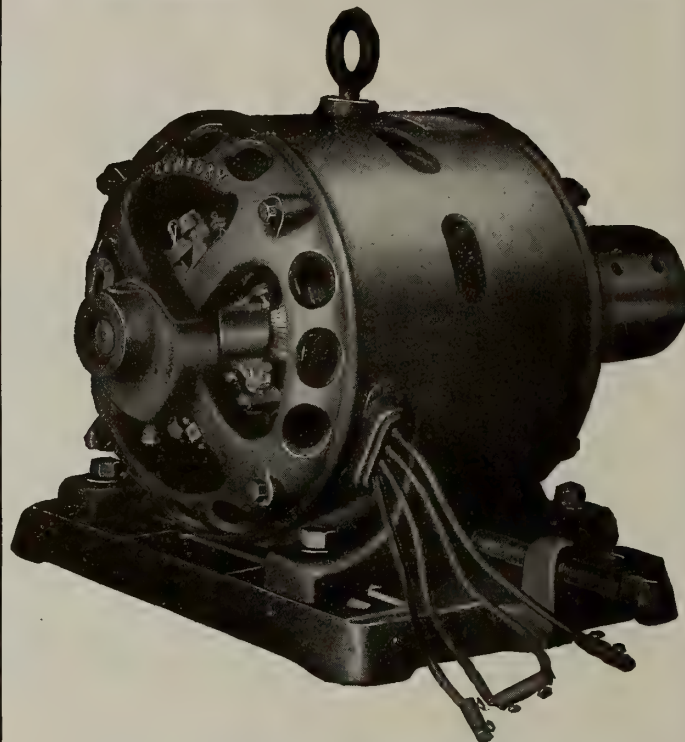
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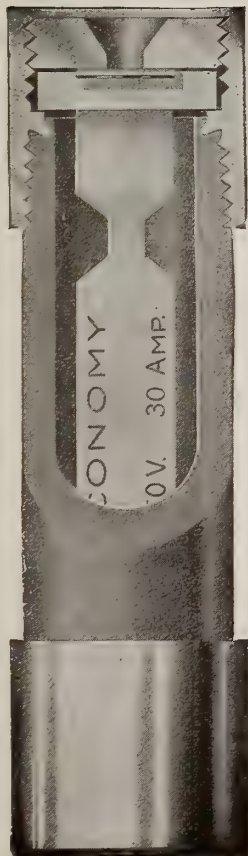
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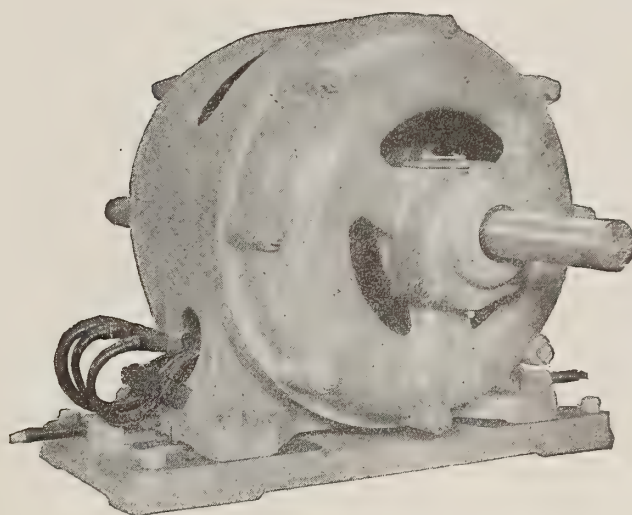
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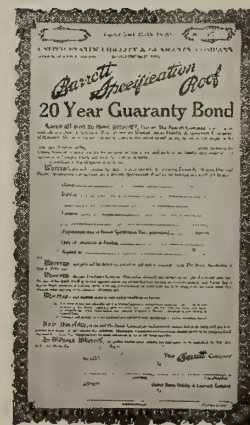
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INDUSTRIAL CANADA

ISSUED BY

The CANADIAN MANUFACTURERS ASSOCIATION.

INCORPORATED.

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No. 1

INDUSTRIAL CANADA

Issued monthly as the official publication of the Canadian Manufacturers Association (incorporated), and devoted to the advancement of the industrial and commercial prosperity of Canada.

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The Call to the 1918 Convention

OFFICIAL notice has been sent out by the president to members of the Association notifying them that the 1918 annual general meeting will be held in Montreal, commencing on Wednesday, June 12th, next. The message contained in the president's letter is one that should be carefully considered by all members.

"It is both your duty and your privilege as a member to attend this meeting," writes Mr. Pearson. "I earnestly hope that you will do so, if only to show your appreciation of the efforts of those who, at considerable personal sacrifice, have been endeavoring to safeguard and promote the interests of Canadian industry throughout the past year."

"Let me also say that your participation in the discussions will be heartily welcomed, for it is only as members give full and frank expression to their views that the Association can be sure it is shaping its policies along lines of which the majority would approve."

"In the trying days immediately ahead of us there will be many serious problems to the solution of which we as business men must devote our best energies,—problems of labor, of material, of production, of transportation, and of taxation. The annual meeting of the Canadian Manu-

facturers Association should be made the occasion for an enlightening discussion of all such matters, as an aid in the formation of public opinion and as a guide to our legislators. The meeting has great potentialities for usefulness if members will but recognize their opportunities and their responsibilities and do what is expected of them.

"In keeping with the spirit of the times, the entertainment features which have characterized previous gatherings will this year be largely eliminated. The programme, a copy of which will be mailed you in due course, is being planned so as to permit of the despatch of all necessary business in two days. Please govern yourself accordingly, therefore."

Montreal, which has been selected as this year's Convention city, is the country's greatest centre of population and of business activity. It has been expanding of late years by leaps and bounds, not alone in the number of its inhabitants, but in those facilities for the development of industry, trade and commerce, that are so important to the country. Our Canadian manufacturers who live in other cities or towns will do themselves a useful service merely by going to observe the features of Montreal's expansion.

Printing Waste Eliminated

WASTAGE in Government printing has long been one of the scandals of the public administration. Not only have volumes been printed for which there has been no sufficient justification, but reports have been bulked up far beyond necessity and editions have been produced very largely in excess of requirements. The business has been transacted almost entirely on the happy-go-lucky principle, without much consideration of the cost and with very little effort to judge relative values.

It is gratifying to find that reforms have been introduced. In a report just issued by the editorial committee, facts and figures are presented indicating that through the elimination of some publications, the curtailment of others and reduction in the size of editions, considerable savings have already been effected.

"In past years there has been much waste in the distribution of the bound Sessional Papers," states the report. "The complete set ranges from twenty-five to thirty-two volumes annually. Despite repeated protests of Senators

and Members, the practice prevailed for several years of sending all these volumes to each member of Parliament. In addition, the books have been forwarded to many organizations which either had no use for them, or could not find accommodation for them. By means of the notification post-card system, which is now being generally followed by the Department of Public Printing and some other departments, it is possible to arrive at a fairly accurate estimate of the public requirements. Instead of binding 600 sets, therefore, as last year, your committee suggested that the number be 350 sets in English, a saving of 7,500 bound volumes, and 150 sets in French, a reduction of 1,500 volumes. The Governor in Council approved of this recommendation.

"Your committee also carefully examined the mailing list for the Dominion statutes, and realizing the great waste in distribution that had existed for years, recommended to Council the elimination of 1,500 copies in English, and 700 copies in French. This suggestion was approved, and your committee can congratulate itself that not a single complaint has been received since this action was taken. On this one item alone, the saving was approximately \$5,500.

"The committee has faithfully carried out the instruction of Parliament to consolidate the two editions of the Auditor General's report, thereby effecting a saving of \$30,000. The committee trusts that the arrangement of the matter will commend itself to the Senate and House of Commons. After making careful allowances for distribution and prospective demand, it was possible, even with the consolidation, to reduce the size of the edition. That some action in this direction was necessary is evidenced by the fact that last year there was a surplus of 2,008 sets of the Auditor General's report (each set consisting of four volumes), representing a wastage of over ten tons of paper, a loss to the country on this one item of \$2,500. It is but fair to the Auditor General to say that he can hardly be held responsible for this loss. The fault rather lies at the doors of Parliament, which, years ago, adopted the rule of printing from 1,800 to 2,750 copies in English, and from 200 to 250 copies in French, of every report."

Savings in the use of stationery have also been effected, and the committee has made various other recommendations tending to economy.

Impaired Railway Service

THE recent decision of the United States Railway Administration—that all solicitation of business be stopped—has brought forth a great many protests from shippers and receivers of freight. It is the general view that a discontinuance of the service will result in serious impairment. Many of the representatives, particularly off-line or outside agents, have been almost wholly employed in tracing and generally looking after the business of the public using the lines which they represent. It

can hardly be expected that the local representatives of the initial lines can furnish information promptly as to the movement of traffic after it leaves them, or as to the conditions which obtain on connecting lines, nor have they the same facilities to trace delayed shipments. Representatives of United States lines in Canada have served a useful purpose in this respect, and have come to be regarded as part of our transportation system.

As a result of the action taken, a great many protests have been filed with Washington, and, no doubt as a result thereof, it has been recently announced that the Railway Administration has taken notice of the distress caused to shippers by the order abolishing commercial soliciting and off-line agents, and will see to it that there is an organization in the office of every originating line that will perform for the shipper the service for which he has had to depend upon the agents now abolished.

Whilst it is the view that this action may afford some relief, it is not expected that any plan that may be adopted, short of a return to the old system, will result in complete satisfaction to the shipper.

In this connection the directors of the Illinois Manufacturers' Association at a meeting held in Chicago on April 23rd, passed a resolution lodging a formal protest with the Director-General of Railroads and the regional directors, against the abolition of line traffic officers. The resolution claims that the closing of the offices will inconvenience shippers, and is no real step towards economy.

The *Traffic World*, which is published in the interests of shippers and carriers, and represents fairly the interests of both, has recently criticized, more or less severely, the action taken by the Director-General of Railroads, and the possibility of what might be expected under government ownership is made apparent. Elsewhere we publish an article from the issue of April 27th, which will be interesting to those who study the problem from the viewpoint of public ownership.

A Word to Readers

THE editorial department is endeavoring to make INDUSTRIAL CANADA of real practical value to its readers among the manufacturers of the Dominion. To a certain extent it is working in the dark. While recognizing that there are certain subjects of vital interest to every Canadian manufacturer, it may sometimes happen that some matters which should be dealt with are overlooked. It would be a great help if our readers would write in more frequently, making criticisms or offering suggestions, so that we might gauge our efforts more intelligently. This paper is peculiarly the property of its readers. It is your publication, and in a sense it is both your privilege and duty to take an interest in its production.

In the National Interest the Business Profits War Tax Should Be Lightened*

By SIR HERBERT AMES

IT will be a disappointment to some of our people if the business tax is allowed to remain another year as it is. I think it is excessive as amended last session, and I cannot but feel that the Government were stampeded then when they increased the rates of that tax. I am making no plea for individuals, I am not asking that the money which reaches an individual should be in any way exempted from the full taxation that it to-day bears. The plea that I am making is in the national interest, not in the interest of the individual; tax him as heavily as you like. But the members of this Government and the members of the House must look forward; they must remember that the day is coming when this war will end; they must remember that the day is coming when they will need that every industrial enterprise in this country shall be solvent, be able to pay its debts, be able to continue to employ its workmen, and be able to find places for the thousands of returned soldiers that are coming back to us. There will necessarily be after this war a tremendous readjustment; there will necessarily be a considerable deflation. Where are the industries of Canada to obtain the additional capital that they will require after the war to enable them to readjust themselves to post-war conditions? They cannot get it in Great Britain; there will be no more capital coming from Great Britain for some years to come. They will not get it from the United States, because the United States will also probably have absorbed nearly all its liquid capital in the enormous loans that they are now placing with their people. They will not get it from our banks in Canada, because our banks after the war will be making arrangements for deflation, and they are not going to allow any money to be put into bricks and mortar in this country—that we may be sure of. Where are our business firms going to get money that is necessary to make the readjustments that must be made after the war? There is only one place they can get it: They must save it now as they go along; consequently if the business profits tax is so excessive that it does not permit a corporation to retain a reasonable amount of undistributed capital so as to be solvent after the war, and to make the necessary adjustments, that corporation will then be at a tremendous disadvantage. My contention is that the sliding scale of the business profits tax is too abrupt; it is quite different from the American business profits tax.

If, for example, you had two firms on opposite sides of the Detroit river, one at Windsor and one at Detroit, and each had a capital of \$300,000, and those two firms each made 25 per cent. profit on a year's business, the firm on the Canadian side would pay \$24,750 in taxes, or one-third of its total profits, and the firm on the American side would pay \$12,150, or one-sixth of what it made.

What is going to happen after the war? American and Canadian firms will be called upon to compete in the markets of the world. American firms have already had two years' start. They had two years before they were taxed at all during which they made enormous war profits and laid aside great sums of money. Hereafter they can put

aside twice as much as we can. Of these two firms, the American company would have \$400,000 capital at the end of three years, and the Canadian \$360,000. If we are going to compete in the markets of the world with our friends to the south of us we must permit our industries to have the same chance to live that they have. What I point out is this: In Canada the State takes one-quarter of all the profits between 7 and 15 per cent. In the United States, if a corporation can show that they have been making seven, eight, or nine per cent. in pre-war times, they are allowed exemption to that amount. On profits between 9 and 15 per cent. they would only have to pay 20 per cent. against Canada's 25 per cent.; between 15 and 20 per cent. the American rate of taxation is 25 per cent., or one-half that in Canada for the same percentage. The rate in Canada for profits of 20 per cent. and over is 75 per cent.; in the United States, 35 per cent. for profits of 20 to 33 per cent. Consequently it will be seen that we take away from our Canadian firms under certain conditions twice as much as would be taken in the United States under similar conditions. Only the other day I saw the statement of a business firm, in which this significant clause occurred: "We have during the last year declared dividends on our preferred and common stock, but the tax we have paid the Government is a larger sum than those dividends combined."

Now, my contention is this: Earnings should pay taxes at its destination, not at its source. If you take these dividends and tax them before they are distributed while they are still in the hands of the corporation, they can be used to increase its productivity and the productivity of the country at large. That is not the place to tax them excessively. When these dividends have been distributed, when they come to you and to me and reach their final destination, tax them then just as heavily as you like, because so long as these dividends are undistributed in the coffers of the corporation they are used for the public good in increasing the production of the country. But when they come to me, I can do anything I like with them, I can spend them in any frivolous way I want to. It is proper for the Government to say: We are going to take such a large amount of your dividends, which are your own exclusive personal property, that you will not be able to indulge in these frivolities, but that money will have to go for war purposes. That is fair, to my mind. But, in my judgment, it is unwise to tax too heavily undistributed earnings of industrial enterprises of the country.

I have even another proposal to make to the Government; a proposal that I wish other ministers were present to listen to. It is this: If you cannot see your way clear to reduce in any way the severity of that schedule where it takes 50 and 75 per cent., permit a company to take part of the money which it would pay you in taxation, half of it, let us say, and invest it in Government bonds. You get the money immediately just the same for your purpose. Let these bonds be registered bonds if you like; let them be non-interest-bearing bonds for the time. Make it impossible for these bonds to be disposed of unless the Minister's permission is given.

* Extract from speech on the Budget delivered by Sir Herbert Ames in the House of Commons, April 30, 1918.



Illustration by Courtesy Canadian Northern Railway Co.

An Important Transportation Development in Montreal
 Entrance to the Canadian Northern Railway Company's Tunnel through Mount Royal
 and into the heart of the city

Montreal, This Year's Convention City

Its Many Claims to Distinction in Manufacturing, Transportation, Commerce and Finance, with Special Reference to Recent Harbor Developments, Which Give It Pre-eminence as an Exporting Centre

By J. C. ROSS

WITH the doors of Europe banged, barred and bolted in the face of tourists, the seas infested with submarines, and the usual travelled highways to the resorts of the United States congested with war supplies, the field of choice for those who must have their annual outing is more or less circumscribed.

In the early days of the war the slogan "See America First" was much used in the United States by hotel, railroad and shipping officials, in an effort to get business.

Canada could not do better than adopt the slogan, "See Canada First." This may well be a patriotic duty, but at the same time turn out to be a real pleasure.

For the past few years the manufacturers of the Dominion have been working overtime in an effort to produce sufficient munitions to smother the Hun, and at the same time to carry on their regular business activities. Although guided by a Munitions Board at Ottawa the manufacturers in many respects had to work out their own salvation and carry on their war operations in a more or less disconnected manner. If they will take advantage of the forthcoming annual convention of the Canadian Manufacturers Association to visit Montreal next month they will see the results not only of their own efforts but the cumulative effects of fellow manufacturers.

Montreal has become the great exporting centre for our war activities. Great warehouses, docks and piers, formerly

crowded with the produce of factories and farms engaged in peaceful pursuits, are now congested with war materials, foodstuffs and other military supplies. Perhaps at no other point in the Dominion can a better idea be grasped of what the war means to Canada than a visit to the Montreal harbor under the stress of war conditions. Thousands of tons of shells, great warehouses stored with grain, dairy produce, baled hay, lumber for aeroplanes and a thousand and one other commodities demanded by the insatiable Mars, crowd the docks and wharves of a port that knew nothing of war four years ago. Slate-colored ships with the minimum of visibility, huge transports, torpedo boats, submarines and wicked-looking destroyers have taken the place of the gaily decorated passenger boats and freighters which came in hundreds to this port in the old pre-war days.

Montreal has many claims to distinction! She proudly wears the title Canada's commercial metropolis. She claims first place as a manufacturing centre, first in regard to shipping, the premier position as a railroad centre, comes at the top of the list as a wholesale and distributing point, and last but by no means least is first as a financial centre. In addition to all this she is one of the most beautiful and historic spots on the continent.

Manufacturers might naturally be expected to be most interested in the output of a place and a list of its manufactured products, but in the case of Montreal, great as are

her manufacturing industries, they probably hold second place to her status as a transportation centre. Here two great transportation systems have their headquarters while a third, the Canadian Northern, is just completing a tunnel under Mount Royal which will enable it to lay claim to the title of being a transcontinental system. Montreal is the connecting link between the great inland water system, on whose broad bosom boats from the head of the Great Lakes sweep past the winding shores of the Province of Ontario, till they meet here with ocean-going ships which carry the inland produce a further 1,000 miles by fresh water before reaching the sea. As a result of this splendid transportation system Montreal of necessity has become a great wholesale and distributing centre. The tonnage from ocean boats landed here is carried by rail and water thousands of miles inland, while the produce of the forest, farm and factory from all over Canada are brought here for trans-Atlantic shipment. Montreal's importance as a wholesale and distributing point goes back to the days of the early fur traders when the Hudson's Bay Company and the Northwest Fur Trading Company had their

headquarters here and sent out their voyageurs by canoe paths into the heart of the continent.

Montreal has retained her place as the greatest manufacturing centre in the Dominion despite the fact that the war has brought about many changes in the nature of the factory output. Since the last convention of the Manufacturers Association, held here several years ago, the value of manufactures in this city has increased many fold. At that time there were no great drydock and shipbuilding plants; to-day the largest drydock in the world has been "doing its bit" in repairing war vessels and other ships during the years we have been engaged in world conflict. Shipbuilding plants have been established since the war commenced and have turned out many large-sized merchantmen, submarines, submarine chasers and ice-breakers. Many new manufacturing plants have come into being and are turning out munitions, while many companies previously engaged in the pursuit of their regular commercial activities have either enlarged their plants to take care of war business or else have established separate war manufacturing plants.



The Palatial Windsor Station, Montreal

Headquarters of the Canadian Pacific Railroad Company's World-Wide Activities



Where Keel Meets Rail—A View of Montreal's Busy Harbor

To those who find statistics wearisome, the following paragraph can be omitted, but those who demand "chapter and verse" or verification for Montreal's claims to commercial supremacy the figures will be of interest:

The city to-day has a population of three-quarters of a million, the annual value of her manufactured products amounts to \$300,000,000, the capital invested in manufacturing totals over \$3,000,000,000, and the number of her workmen 100,000. Of Canada's total number of banks one-third have their head offices here, with combined assets exceeding one billion dollars. Her bond and brokerage houses, her insurance companies, trust companies and other financial institutions are known from end to end of the Dominion. But it is not only what Montreal is able to produce herself that makes her great. Her unique position at the head of navigation, the unlimited water powers at her door, the great extent of

this province's pulp and paper resources and her abundant supply of cheap labor all enable her to maintain her place as the Gateway to Canada.

In shipping a wonderful expansion has taken place; a growth that has kept Montreal fully abreast of the progress made by the Dominion as a whole.

In the past ten years the number of trans-Atlantic ships entering the port has increased from 364 to 579, and the tonnage from 1,300,000 to 2,000,000 tons. Including lake vessels and those from the Maritime Provinces there were 6,921 vessels cleared from this port last year with a total tonnage of over 5,000,000. When it is remembered that the season is only seven months, the presence of that number of boats means an average of 1,000 a month. The total trade through the port has grown in ten years from \$160,000,000 to \$750,000,000.

The grain shipped through Montreal elevators has grown from less than a million bushels in 1906 to over 62,000,000 in 1914. Since the outbreak of hostilities the grain trade has been more or less disorganized, and last year only 43,000,000 were sent overseas.

A similar growth in the amount of railway traffic is shown. In 1907 the Harbor Commissioners handled 70,000 cars of freight, while last year 215,000 were loaded and unloaded on the wharves.

Canada has a wonderfully cheap asset in Montreal harbor. The total cost, twenty-eight million dollars, is represented by:

Eighty to 90 berths from 350 up to 750 ft. in length, with depth of water 20 to 35 ft. Thirty-five of these berths are modern concrete wharves of a lasting character, built in the past few years. Two large modern fireproof elevators with conveyor system to fifteen steamship berths, twenty-one permanent fireproof transit sheds, fifty miles of railway harbor terminals, as well as complete construction plant and organization. About 200 acres of land, situated in the most valuable position, industrially, in Montreal, have been reclaimed. One of the new developments in connection with the Port of Montreal, and the industrial situation adjoining the port, may be instanced by the fuel oil shipments from the port during the season of 1917.

During the year large quantities of oil were sent overseas, thereby making the Dominion a still more valuable ally to the Motherland.

As a financial centre Montreal's place can best be gauged by a record of her bank clearings. In 1911 these amounted to \$2,368,000,000, while last year they totalled \$4,188,000,000, or over a third of the total for the whole of Canada.

As a railroad centre this city has long maintained a lead which will be further increased through the construction of the Canadian Northern Tunnel and the consolidation of the Grand Trunk Pacific, Canadian Northern and Intercolonial into one huge Government-controlled system.

In spite of Montreal's claim to distinction as a transportation, manufacturing and financial centre, its chief charm to the visitor lies in its scenic beauty and its historic associations. From the time that Maisonneuve founded the city away back in 1642 up to the time of the conquest of Canada by the British in 1759-60, the City of Montreal had been the very centre of Indian warfare, as well as of French colonization, fur-trading and military

activities. Since that time it has been the commercial, shipping and transportation centre of the Dominion. It is the first place where the English meet the French, and this bilingual city represents to a large extent the effort of the two races to work out a common destiny on the northern half of the continent. In many respects the business men of this city have imbibed considerable of the courtesy and culture of the refined French-Canadians, while the latter in turn have caught something of the English spirit and viewpoint.

The appearance of the City of Montreal differs from that of the ordinary English-speaking city on this continent. The narrow streets of the down-town district with the frequent placards and tablets in commemoration of historic incidents long gone by, recall the days when the place was a fortified trading post. From the narrow down-town streets the visitor can pass to the congested French district in the east

end or to the beautiful residential district in the west, where nestling on the slopes of Mount Royal are some of the finest homes in the Dominion. In a historic sense it is only necessary to mention such places as the Chateau de Ramsey, where the early French governors lived, and where the United States general had his headquarters during the American invasion in the Revolutionary War; the historic St. Anne's, a short distance from the city; the famous Lachine Rapids and the boat ride down its swirling waters, which attracts tourists from all parts of the world; the outlook from the famous Mount Royal, and the hundred and one other places, statues and names redolent of early Canadian history.

Montreal is different from other cities on this continent, partly because of the mingling of two races, partly because of its premier position as an industrial, transportation and financial centre, and also because of its historic associations; altogether, no spot in Canada so well repays a visit as the historic old city built on the side of Mount Royal.

The 1918 convention of the Canadian Manufacturers Association will be held at the Windsor Hotel, Montreal. The importance of the gathering needs no emphasis. In these critical days it is more than ever desirable that the manufacturers should take counsel together and decide upon those lines of policy which will carry the nation's industry safely through the testing-time that is to come. Let there be a large attendance.



Montreal Harbor—One of the Travelling Cranes

National Registration and the Employer

A Brief Discussion of the Problem With Suggestions as to How Canadian Manufacturers Can Best Assist in Securing a Registration That Will Permit of the Intelligent Mobilization of Labour Later On

By G. M. MURRAY

General Secretary, Canadian Manufacturers Association

ON a day that has yet to be fixed by proclamation, but which will probably be a Saturday towards the end of June, Canada will undergo the novel experience of taking complete stock of herself, so far as her man and woman power is concerned.

There are those who say that everybody in Canada should have been compelled to register long ago. Whether that be a fair comment or not, the fact remains that the stern necessities of war have now brought us face to face with a situation where registration can be no longer delayed, without serious and unwarranted prejudice to the success of the cause to which we are irrevocably committed.

Why Canada Needs an Inventory

There are three compelling reasons why Canada must immediately provide herself with an inventory of her man and woman power, and the bare statement of those reasons will suffice to explain the purposes to which the information, when acquired, is to be applied.

1. The men who are pouring out their life's blood on the fields of Flanders to defend not merely our honour but our liberty, must be promptly and substantially reinforced. That is a plain statement of fact, made upon the authority of the Prime Minister of the United Kingdom, which admits of no argument. The cumbersome machinery of the Military Service Act, as it first operated, failed to secure the needed number of recruits. More effective measures have now to be resorted to. With a complete registration of Canada's man power to guide them in their work, the military authorities will be greatly aided in their efforts to secure the men needed for our self-preservation.

2. The production and preservation of food, the manufacture of munitions and of all kinds of war supplies, the building of ships, and the transportation of our products to the places where they are most required, are all just as essential factors in the winning of the war as sending men to the trenches. It is the declared policy of the Government to have Canada make her maximum contribution towards the prosecution of the war to a successful issue. This she can only do providing she knows what work each person can do best, and then sees that he does it. In other words, registration will prepare the way for a nation-wide application to Canada of the message which Nelson flung from the mast of his flag ship at Trafalgar: "England expects that every man this day will do his duty."

3. Britain and her Allies need food, and need it badly. Canada can add to her exportable surplus of food in only two ways: first, by increasing her production, and second, by curtailing her consumption. It is more than conceivable, it is probable, that if the war is prolonged into 1919, the people of Canada will have to make the acquaintance of food cards, and submit to a strict system of food rationing. To carry out such a plan intelligently and equitably, it is indispensable for those in authority to have accurate information as to the number and distribution of our population. Again, there is

no way except by registration to meet the unavoidable requirements.

Registration will be compulsory upon all males and females resident in Canada, of 16 years of age and upwards. Care is being taken to make the act of registering as simple as possible, consistent with securing such information from each registrant as is necessary for national purposes. All that a person will have to do will be to attend at any one of the hundreds of places that will be provided in each electoral constituency, and there answer certain questions that will be set forth upon a card. When the answers have been duly recorded, he will be required to certify to the correctness of the answers, following which he will be given a certificate, which he shall always carry thereafter upon his person.

Those who by reason of sickness, absence from Canada, or for any other good and sufficient reason cannot attend upon the day proclaimed, will be permitted to register subsequently at any post office. The same facilities that will be utilized for effecting their registration will also be utilized to effect the registration of those who attain the age of 16 after registration day and those who, after registration day, are discharged from any of His Majesty's naval or military forces.

That it is clearly the intention of the Government to see that everyone does register will be apparent from the nature of the penalties that are provided for failure to comply. For default in registering, the following consequences shall ensue:

(a) A defaulter renders himself liable to a fine of \$100 and one month's imprisonment, and to a further fine of \$10 per day for every day he remains unregistered.

(b) For so long as he remains unregistered, the defaulter loses his franchise.

(c) For so long as he remains unregistered the defaulter, if an employee, is disentitled to any salary or wages that would otherwise be due him; if an employer, he is disentitled to the services of any person in his employment, though he nevertheless remains liable for the salary or wages earned by such person.

(d) The defaulter forfeits his right to travel by any railway or steamboat and is disentitled to demand board or lodging at any hotel, restaurant, boarding house, etc.

Of particular importance to employers is another penalty which provides that any person who continues an unregistered person in his employment or who pays him any salary, or wages, with respect to any period while he is unregistered, thereby renders himself liable to a penalty corresponding in character and amount to the penalty which the unregistered employee himself shall have incurred.

Duty Can be Easily Discharged

While upon first consideration, these requirements and penalties may appear to be somewhat drastic, it is, important to remember that the duty of registering is one which can be very easily discharged, but which if not discharged is an act of disloyalty deserving of appropriate punishment. It is also important to understand that in all the preparations they are making to take the registration of Canada's man and woman power, the Canada Registration Board are endeavouring to

every turn to study the convenience of the public and to provide facilities for the work being done with the minimum amount of interference to business and to production.

The Board feel that their task is one which, by reason of its immensity and complexity, to say nothing of its importance, entitles them to the sympathy of the public and its loyal co-operation in making their work effective. Theirs is a task without parallel in the history of Canada, a task which grips the imagination and almost overwhelms one by its infinity of detail. It is altogether probable that for registration day the Board will be in control of 60,000 offices throughout Canada, manned by a staff of well on to 200,000 workers, each of whom must be thoroughly drilled beforehand in the duties he will be required to perform. There will be no time for gaining experience after one has entered upon his employment, for the period of that employment will last but 15 hours. The Board can take no chance of failure, consequently each individual member of its staff must be selected with an eye single to the qualifications he possesses for the work in hand.

How Employers Can Help

Employers of labor can, if they will, greatly simplify the work of the Board and help in securing a registration that will permit of the intelligent mobilization of labour, if they will themselves undertake the registration of those in their employ, or have it done under their personal direction. Considered purely on patriotic grounds, it is no less that the duty of employers to give their co-operation. They will also find it to their personal interest to do so for the following reasons:

The employer who sees to it that his employees are all registered before or upon the day of registration will thereby relieve himself of penalties to which he might otherwise be exposed. It is quite within the range of possibility that, immediately after registration day, the premises of manufacturers may be visited by police officers who will demand of every person employed therein that he produce his registration certificate. According to the regulations, any fine recoverable from an unregistered employee will also be recoverable from the employer himself. Bearing this in mind, employers will probably be glad to avail themselves of the opportunity to have one or more of their office staff sworn in as Deputy Registrars, in which event there is no reason why the necessary cards and certificates cannot be supplied a few days prior to the day officially proclaimed, and the whole working force registered with the minimum of inconvenience to all concerned.

Register on the Premises

Unless in some such way as this provision is made for registering employees upon the premises where they work, it is inevitable that they will take time off to comply with the duty required of them by law. The average time required to register a person, including the issue of the certificate, should not exceed eight minutes, but the necessity of waiting one's turn at public places of registration may sometimes cause the registrant to lose an hour or two of time. By having his employees present themselves before a Deputy Registrar in his own factory, one at a time, the employer can effect the registration of his entire staff in a manner that will avoid any material interference with production. Presumably his employees will be just as much interested in earning their full wages as he will be to secure from them their full day's work.

In general practice it will be found that the employees of any establishment can be more quickly much more intelligently registered by one of their fellow employees, who knows something of their circumstances and capabilities, than by one who

is a complete stranger. Any mobilization of labour that may subsequently be effected upon the basis of the information supplied upon the cards, will be undertaken in the national interest, and inferentially therefore in the interest of the employer himself, so that it will be as much to his advantage as to the advantage of the Board or the advantage of the country, that he should provide facilities that will ensure the work being performed intelligently and expeditiously.

Any employer of labor who is willing to co-operate in this way has only to communicate with the Registrar of his electoral constituency (whose name will be announced in the public press), to ensure the acceptance of his offer of service and the authorization of arrangements that will be mutually satisfactory.

To Make Ferro-Silicon

Plant Being Established at Beaupre, P.Q., to Supply the Imperial Munitions Board

A new industry for the manufacture of ferro-silicon is soon to be established at Beaupre, P.Q. The plant, which is already under way, will be of brick and steel construction, and will have three furnace rooms, each 15 ft. x 50 ft. The electric station for supplying the furnaces with power will be 160 ft x 20 ft. Mr. E. A. Wallberg, of Montreal, who is largely interested in the Laurentian Power Company, of Seven Falls, several miles below Beaupre, is at the head of the project, and Mr. James Ruddick, also of Montreal, who is manager and engineer of the Laurentian Power Company, is the manager of the new concern. The company has a large contract with the Imperial Munitions Board for the manufacture of ferro-silicon, and it is expected that the plant will be in operation within three months' time, with a daily output of twelve to fifteen tons, and employing a staff of one hundred or more. The contract for the steel to be used in the building has been awarded to the Eastern Canada Steel Company, and Mr. Walter Sharpe is the general contractor. The electric power will be supplied by the Laurentian Company. Beaupre, the site of the plant, is a short distance below Quebec city, on the line of the Quebec Railway, Light, Heat and Power Company.

New Fuels for Autos

Mixtures that Are Being Tried in Order to Solve the Problem of Reduced Supplies

The number of motor vehicles is increasing so much faster than the supplies of gasoline that the fuel problem is rapidly getting more serious. Alcohol has often been suggested, but it is not altogether satisfactory, and the supply is not great enough to enable it to take the place of gasoline. Benzole has also been tried and, while satisfactory, it too is not produced in sufficient quantities to become the universal fuel, and it would not be desirable to build several different kinds of motors to use the different fuels. A mixture of the available fuels naturally suggests itself, and experiments that have been made show that alcohol does not mix properly with gasoline, but benzole dissolves both alcohol and gasoline. It has been found that a mixture of 25 per cent. each of gasoline, and benzole with 50 per cent. of alcohol, works very satisfactorily in our present vehicle motors, and as these proportions correspond fairly well with the output of the various ingredients that may be anticipated, this may prove to be the solution of the fuel problem—unless advances are made in the design of crude oil motors.

Has Canada Real Genius for Shipbuilding?*

There is No Doubt that the Necessity of Building Ships at the Present Moment Will
be a Fair Foundation for the Development of Skill in Shipbuilding if There
be a Real Genius Among Our People for That Kind of Thing

By HON. J. S. McLENNAN

SUPREMACY on the high seas has to most nations at one time or another been an extremely attractive thing. There is pride in supremacy on the part of citizens of any country who are in that position, or approach it. Supremacy is, I think, or has been through the ages, the great desire of every nation at one time or another. It has been of great profit. It has been the foundation of the wealth of most nations which have become greatly prosperous. For example, a golden codfish hangs in the Legislative halls of Massachusetts. It is a symbol of the fishing and of the sea-borne trade which grew out of the fishing along the coasts of North America and founded the wealth of New England, which has done so much to develop the resources of the United States.

Britain has so long been in a position of supremacy as regards her maritime commerce, that we are at times apt to forget that she has not always been in that position. A thousand years ago a town on the coast of Italy, which is now of interest only to the archaeologist and the tourist, was far in advance of all other places as a shipping centre. The code of laws which her merchants and ship-owners framed became the basis of international maritime law. I mean Amalfi. Genoa, Pisa, Venice, took in turn this position of supremacy. Spain at one time was the first of all sea-faring countries. Again Portugal. France for a very long time was the first of nations in overseas commerce; in fact, the skill of the French in shipbuilding was so great that after her supremacy or near supremacy in the high seas had long since passed away her shipbuilders continued to hold the first place in the art of shipbuilding. Holland, again, has held the position of supremacy. England, of course, has held it for a long time. One might also mention the United States in this connection, because, although the United States never held the first place, they were so close a second to England at one time as to be a most dangerous rival, and had not conditions changed they might possibly have even surpassed Great Britain.

Some Illuminating Figures

Before I begin to give figures I may say that they are taken from a Report on Bounties and Subsidies submitted to the British Parliament by the Board of Trade in June, 1913; a Report of the United States Bureau of Navigation, viz., a Report of the Commissioner of Navigation, 1914 (House Document No. 66); and much interesting and valuable information on this general question will be found in a "History of Shipping Subsidies," by Dr. Royal Maeker, published by the American Economic Association in 1905. I am given to understand also that the Third Interim Report of the Georgian Bay Canal Commission contains a great deal of information on Canadian shipping, which is not otherwise available. That report has not yet been published, but I believe it will be found to be an important and valuable document when it is brought before Parliament and the people of Canada.

With regard to the relative position of the United States and Great Britain, the House Document No. 66, to which I

have referred, gives the following figures: In 1850, the foreign trade of the United Kingdom had 2,200,000 tons of shipping; the United States had 1,439,000. In other words, Great Britain had three tons of shipping and the United States vessels engaged in foreign trade had two. Ten years later, in 1860, Great Britain had 2,800,000 tons and the United States had 2,380,000. Roughly, the United States had four tons of shipping for every five tons that Great Britain had. In 1912 Great Britain had 10,400,000 tons; the United States had 923,000 tons. In other words, the United States had one ton of shipping for every eleven tons which Great Britain had.

There has naturally been a tendency in countries such as France and the United States to try to revive by Government aid the past glories of their mercantile marine.

Various Aids to Shipbuilding

We might almost put Canada in the same class. There was a time when wooden shipbuilding flourished and the Maritime Provinces of Canada owned far more shipping in proportion to their population than any other country. About the time of Confederation, it is currently reported, there was one ton of shipping owned in Nova Scotia for every man, woman and child in the province. I have not been able to obtain more accurate figures to bring to the attention of honorable gentlemen, but I know that is commonly stated. I believe other senators will corroborate my statement. We are also on the eve of considering what can be done to increase the shipping owned in Canada. As it is probable that no new method of assisting the ship-building industry by Governmental aid can be devised, it is well to look at what has been the history of the various aids given by the principal countries in the world who have engaged in that industry. I may say that I undertook to investigate this subject entirely with a predisposition to find that Governmental aid was of material assistance in securing an expansion of shipbuilding in those countries which had given it. In a moment I will give you figures dealing with the principal shipbuilding nations of the world.

There are three forms in which assistance has been given: first, assistance to the building of vessels and engines; second, remission of duties, and, in the case of Germany, the remission of internal freight rates on Governmental railways; and, third, subventions for vessels of various classes, according to the number of miles travelled, their speed, and the trade in which they are engaged. According to the blue-book to which I have just referred, during the period between 1901 and 1911, the increase in tonnage in the United States was 156,000 tons, or 31 per cent. In the United Kingdom there was an increase of 3,509,000 tons, or 49 per cent. In Belgium it was 55,000 tons, or 52 per cent.; France, 310,000 tons, or 49 per cent.; Germany, 1,007,000 tons, or 66 per cent.; Denmark, 154,000 tons, or 60 per cent.; Austria, 130,000 tons, or 61 per cent.; Holland, 216,000 tons, or 70 per cent.; Sweden, 251,000, or 73 per cent.; Norway, 456,000 tons, or 86 per cent. The figures which I have given are, of course, in round numbers.

I will just mention the aid that is given in this regard by the various countries mentioned. In Great Britain no boun-

* Extract from speech of Senator McLennan, of Sydney, N.S., on Shipbuilding in Canada, delivered in the Senate, April 12th, 1913.



Montreal's Huge Floating Dry Dock

The Annual General Meeting of the C.M.A. takes place this year in Montreal

ties or subsidies are given except for services in carrying the mails, and retaining fees for certain specially designed vessels which can be called out as cruisers by the Admiralty. In the United States, until recently, no bounties were given. Shipbuilding materials are free of duty, and in recent years subsidies have been given to mail steamers in order to develop American shipping. In 1891, in 1902, and again in 1915, efforts were made to establish a generous system of bounties in that country. In relation to the figures with reference to American shipbuilding which I have given, it should be noticed that a considerable amount of American shipping sailed under foreign flags. In August, 1914, at the breaking out of the war, an Act was passed to enable that shipping to be put under the American flag, and 278,000 tons were almost immediately transferred to American registry.

In Germany subsidies were given for established lines, amounting to about £350,000 a year, or about \$1,700,000. This was in addition to payment to mail-carriers. In the construction of ships, exemption from duty was granted on certain

articles used in shipbuilding, and there was a material reduction in railway rates for those materials. The exact value of that is not ascertainable, but various writers on the subject say that it is very considerable. Germany also gives navigation bounties in the form of a reduction of inland rates on through bills of lading to East Africa and the Levant. It is interesting to note here—and I give it on the authority of the *London Times* of July 17, last year—that Germany proposes to restore her merchant shipping after the war by direct bonuses to owners of vessels lost, captured, or interned, which amount to about 60 per cent. of her shipping. The bonuses to be given depend upon the space of time in which new shipping is built. If the work is done in three years the ship-owner will get from 60 to 80 per cent. of the value; if it is done in from four to six years he will get from 40 to 60 per cent., and if it is done from seven to nine years he will get between 20 and 40 per cent.

In Norway the only bounties given cover customs duties on the materials used in the construction of vessels. They

amount to about 52 cents—two and threepence—per gross ton for steel ships with engines and boilers made in Norway. In the ten years between 1901 and 1911, only £50,000 were paid as bounties, and yet Norway's increase in shipping was enormous. More of her ships entered the ports of the United Kingdom than of any other country. In 1913-14, 11,000,000 tons of Norwegian and 10,000,000 tons of German shipping entered British ports; in 1913 Norway built 50,000 tons and bought 50,000 tons more from Great Britain.

Denmark gives a drawback of custom duties. Sweden gives bounties, and shipbuilding materials enter free. Holland gives no assistance to shipbuilding, but has made loans to certain lines to the colonies. In Belgium materials enter free, and loans are made to certain shipping companies trading in the Mediterranean, the Argentine and the Levant trades.

Austria has given large shipbuilding subsidies. Under the law of 1907, which was in force when this blue-book was compiled, she gave £1, 13s. 4d. per ton, and 6s. 8d. for every 100 kilos of machinery when half of it was made of Austrian material. Navigation bounties based on one penny per ton per 100 sea miles, and limited to a maximum of something over \$1,100,000 per year were given. Her policy seems to have protected her own trade. In 1901 Austrian entries amounted to 1,300,000 tons; in 1911 they amounted to over 2,000,000; while foreign entries only increased from about 600,000 to 900,000 tons.

France has been giving bounties for construction and subsidies since 1881. The Act of 1906 was in force at the outbreak of the war. Its main provisions are the granting of a maximum bounty of £6, 18s. per ton, covering both hull and engine, and equipment bounties based on voyages, speed, and so forth. During the ten years that I have mentioned the French Government paid out over \$75,000,000, and what was received for it was by no means commensurate with that outlay—it did not even protect her in the carriage of her own national goods. In 1901 only 29 per cent. of the ships entering and clearing from French ports were their own ships. In 1911 this had dropped to 28 per cent.

The Practice of Other Nations

Japan has an elaborate system of bounties, payable only to Japanese companies or Japanese subjects for materials of Japanese manufacture, and undoubtedly it has greatly increased trade. Between 1901 and 1911 Japanese shipping increased from 3,000,000 tons to 9,000,000 tons, while foreign shipping increased from 7,000,000 tons to 10,000,000 tons—in one case about 300 per cent., and in the other about 30 per cent.

From these figures it would appear that it is very difficult to draw any conclusions which are absolutely certain, and which would form a basis of action at the present moment. For example, in 1901 Norway and France had practically an equal amount of tonnage, France having 527,000 tons and Norway 531,000 tons. During the ten-year period which I have mentioned French tonnage increased by 310,000 tons, while that of Norway increased by 456,000 tons. In other words, the Norwegian tonnage increased 50 per cent. more than that of France, although Norway spent only \$250,000 in promoting shipping during that time, whereas France spent \$75,000,000.

It is perfectly obvious that other considerations have to do with the increase in the shipping of any country. To my mind it is a question of the relative attractiveness of the various employments of the country. The decline in American shipping took place during the period when the United States was the envy of the whole world because of its enormous progress and wealth. That decline took place not, as so many people imagine, on account of the Civil war, because

it started before the war, but because the internal development of that great country was more attractive to the capital and the energy of people, who, under other conditions, had found shipbuilding and the business that grew out of seafaring and foreign commerce more attractive than anything that was available at home. That followed on the development of the railway systems of the country, which made possible the opening up of the Great West in a way that was not possible before. It is much the same in Canada. There are people from Nova Scotia, New Brunswick, and Prince Edward Island who are helping to develop Middle and Western Canada, who, had they been born a few years earlier, would have been merchants or ship-owners in Pictou, St. John or Halifax, trading with the rest of the world overseas, and putting their money or the money of the community into new vessel after new vessel. From 1821 to 1842, about 85 per cent. of the exports and imports of the United States were carried in American vessels. From that time shipping fell away until in the year 1913-14 only 8.6 per cent. were carried in American bottoms.

What Canada Has Done

Canada has done a good deal in the way of subsidies for vessels. In 1913 we gave about twice as much as Germany. The figures paid by the different countries for the promotion of shipbuilding, mail carrying, and the like, stand somewhat in this way: France, about \$10,000,000; Japan, about \$6,000,000; Canada, nearly \$2,200,000; Germany, \$1,046,000. I am not criticizing the policy which has been pursued. I think that at the present juncture no one can fairly criticize the policy that gave us Canadian ships and established Canadian routes, any more than they can justly criticize a policy which has established manufactures in this country. But it is questionable whether the expenditure of an equal amount of money, after a thorough and scientific examination of the question, might not show that more profitable results could have been achieved. I have been told, on what I believe to be good authority, that non-subsidized steamers carried more passengers into our ports than subsidized steamers, and that they carried considerably more grain than the subsidized steamers.

In the last few years there has been of course a considerable growth. It was only in 1913 that the White Star line was taken on the subsidy list—many regular lines are not subsidized. The reason that I have brought out these facts is that they seem to point to the necessity for most careful examination of the whole question before the Government of this country embarks on a policy for time of peace in relation to shipbuilding or the encouragement of shipbuilding or ship-owning in Canada. There is no advantage to this country in doing as France has done or proportionately as France has done, in the building up artificially of an industry that does not appeal to the people of the country. There are some signs that shipbuilding no longer appeals to the people of Canada. Either it no longer appeals, or the opportunities on land appeal much more strongly to them than the opportunities in seafaring. I think that instead of there resulting from the war any increase in Canadian tonnage there has been a falling off. I understand that one well-managed and profitable line which owned 14 or 15 steamers—which began with one steamer and has gradually built up its trade—has since the beginning of the war sold all its steamers except one which was interned in Germany, and these have not been replaced. One other steamer I know of and which had been engaged in foreign trade, was lost and has not been replaced by her well-to-do owner. Another was sold at a profit which at the time seemed extraordinarily large, but now, after a couple of years, seems microscopic. That steamer was not

replaced. I know no instance other than these, and these do not show eagerness to continue in a business which has been extraordinarily profitable.

As I have said, I have nothing but commendation, and I feel sure that all who have looked into the question have nothing but commendation, for the policy of the Government at this time of crisis, when so much that is vital depends upon shipping. I feel that the Government is doing all that it can to promote the building of ships in Canada. Every existing shipyard and every shipyard that can be improvised is full of business, and it is right that it should be full of business.

If I may go back for one moment to a vital point, I may say that Norway, which as you will remember is the country which made the tremendous advance of 80 per cent. has increased its tonnage enormously during the war. It was Norwegians who placed orders right out to British Columbia and every place where they could get a ship built. In other words, the whole genius of Norway points towards shipbuilding, and, unless those cases in Canada of which I speak are sporadic and accidental, the genius of Canada at the moment is not tending towards shipbuilding; but there is no doubt that the necessity of building ships at the present moment

will be a fair foundation for the development of skill in shipbuilding if there be a real genius among our people for that kind of thing. The figures that I have found may possibly be wrong; but my purpose in bringing them to the attention of honorable gentlemen and of the Government at this time, is to urge that before any policy be adopted the whole question should be very carefully investigated. It may seem academic to bring up the question at this time, when so much seems to be trembling in the balance and when the prospects for us are not over bright. They are perhaps darker than they have ever been since the autumn of 1914. But I feel that that condition is temporary and that a permanent and enduring peace is bound to come. The only question is whether it comes sooner or whether it comes later. The whole of civilization is in the conflict until it does come, and if it does not come civilization will be good for nothing. Therefore, I think that everything that can be done to build up the resources of this country in the best possible way to get the greatest return for every dollar that is spent, and for all the energy that is exercised. A thorough investigation of a matter so critical, to see whether we should embark on one policy or another, is of vital importance, and all the attention given to it is a service to the country.

Ships Essential to the Welfare of Canada*

It is a Wise Policy for the Government to Aid in Every Possible Manner, by Means of Bounties or Otherwise, the Development of the Shipbuilding Industry

By HON. FREDERIC NICHOLLS

IN the first place, I desire to compliment the honorable member from Sydney on his most illuminating and instructive remarks. Perhaps the one criticism that I have to offer is that they were tinged with a little more pessimism than the circumstances of the case warrant. It is true that heretofore this country has not shown any great development in the building of steel ships, which are the class of ships required to-day; but I may point out, honorable gentlemen, that only a couple of years ago it was equally true that this country had not shown any great genius for developing the manufacture of munitions, and yet we have developed that entirely new industry, requiring as precise skill as any that was ever engaged in, we have shown our genius for it, and our shipments have amounted to as much as \$30,000,000 a month. I am one of those who believe that Canada must help itself if it is to maintain the position of which it is so proud at the present day. Academically, in common with others, I am opposed to the system of bonusing, and yet every country in turn has realized the practicability of granting bonuses from time to time to special industries in order that they might be developed for the well-being and advancement of the people. The honorable member from Sydney comes from a town where our largest steel works are established. We all know the arguments that used to be heard in the other House in reference to the disadvantage of granting the bonus to the Dominion Iron and Steel Company for the establishment of the steel industry. But is it not a fact, honorable gentlemen, that to-day, had it not been for the establishment of that steel industry by means of the bonus that was granted for a limited number of years, all or almost all of those millions of dollars to which I have referred, which have been distributed in this country for the manufacture of munitions, would have been lost to us? The bonus

enabled us to establish our steel industry on a sure foundation, and as a result we have been able to aid ourselves and aid the Empire at a time of stress.

Now, honorable gentlemen, in regard to shipbuilding, it is true—I think I pointed it out once before, after a speech by the honorable member for the Gulf division (Hon. Mr. L'Espérance)—that some years ago an endeavor was made to secure from the Government of that day a bounty on shipbuilding, and I think I am correct in saying that the Cabinet had practically decided to grant the bounty, but they found on trying the temper of the other House that there was such an opposition to the granting of a bonus, or bounty on tonnage, that the proposal had to be withdrawn. If the proposal had not been withdrawn at that time we should be to-day in the same position to aid the Empire with ships as we are with steel.

Farming Class Will Suffer

It is a strange coincidence—in fact, it is the irony of fate—that the class of the community that probably is suffering the most through the lack of ships, apart from the actual carrying of troops and munitions, is the farming class. I believe that the establishment of a Canadian shipbuilding industry is going to do more to help the farmer than probably any other policy which could be advocated. Our production of grain is increasing by leaps and bounds. I have figured out, while the honorable gentleman from Sydney was speaking, that it would take a thousand ships of 5,000 tons each to move the grain that was exported from the North-West provinces alone last season. I think we can reasonably look forward to at least doubling our production of grain in the North-West. That would mean 2,000 ships. And where are we going to get them? Of what avail are our endeavors to increase the population by immigration, if we cannot find a market for the goods that we have to sell? The farmers

* Reply of Senator Nicholls, of Toronto, to the foregoing speech by Hon. Mr. McLennan.

have been keenly interested in the railway rates for grain; in fact, when the Railway Board recently authorized an increase in rates of freight the grain-growers protested very strenuously against such an increase. But, after all the strength of a chain is that of its weakest link. What will it avail them to secure reduced rates on the railways, even to secure from Government-owned railways a rate that will barely pay the cost of operation, if the foreign ship-owner takes toll, and the produce of our soil must be sent from our own ports by foreign shipping? If the profit is to be absorbed by the foreign ship-owner, our farmer is going to have a great deal more competition than formerly in the scramble for after-war trade. It is only reasonable to believe that those countries that own ships will look after the carriage of their own products, and if we want to get service or accommodation we must bid against those countries and can only secure that accommodation at a higher rate.

I think it is just as essential for us to look to the future and make provision for what our community may require as it is for the head of a family to invest in life insurance in order that the next generation may be adequately provided for. When we know that ships are essential to the success of the country and everything that contributes to its up-building—essential, for instance, in carrying the products of the soil and of our industries to other shores, or bringing back to this country the raw materials which can be manufactured by Canadian labor into finished articles—and when we know that there is a lack of tonnage, surely it is incumbent upon us, and surely it is a wise policy for the Government of the day, to aid in every possible manner, by means of bounties or otherwise, the development of that industry to enable us to hold our position in the world of commerce.

Nova Scotia Water Powers

New Measure Vests All the Waters and Water Courses of the Province in the Crown for the Benefit of the People

The Commissioner of Public Works and Mines of the Province of Nova Scotia recently introduced a Bill (No. 124), entitled "An Act respecting Water-power," which is of great importance to the development of the water-powers of the Province, in the public interest. In moving the second reading of this bill, Hon. Mr. Armstrong indicated that its provisions were so novel that he would take a short time to explain some of the reasons for the legislation and some of its provisions. The subject of the extent, value, and control of water resources was not a new one to the Legislature. The modern growth of hydro-electric development has made the subject more interesting and more practical, and it was felt that the time was opportune to take some further measures to conserve and foster this resource for the benefit of the Province, even though these measures might be considered radical.

History of the Legislation

In 1909 the Legislature with a view to aiding the gold-mining industry, had adopted the policy of giving aid to hydro-electric development. But the development was of a very limited nature. It was within the recollection of many of the members how this whole question was discussed in connection with the Nova Scotia Tramways and Power Company, the Halifax Power scheme, and other hydro-electric proposals. At that time the opinion was over and over again expressed that the time had arrived when the water resources of the Province should be investigated with a view to

ascertaining their value, their extent, for the purpose of making recommendations as to their future control. About the same time the Public Utilities Act was adopted, which to a limited extent is empowered to deal with those resources that are developed as public utilities. In 1914 an Act respecting the development of water-power within the Province was passed. A Commission was appointed which began its investigations in 1915 and continued to the present. Under the provisions of the Act the Commission so appointed was empowered to devise just and practical rules respecting the flow, drawing off, disposal, distribution, storage, preservation and management of lakes and running waters within the Province; to study the question in what respect, if any, the laws of the Province governing water courses as regards floating of timbers, the flow, distribution and storage of water, ought to be amended; to consider and recommend uniform rules under which companies incorporated for the development of water-powers shall exercise rights of expropriation.

The Present Proposal

The proposal now before the House was the outcome of the work and study of the Commission. The general proposal was that, subject to the rights of riparian proprietors to use water for domestic purposes, all the waters and water-courses of the Province should become vested in the Crown for the benefit of the people of the Province. The legislation provided for regulations to be made by the Commissioners to be appointed under the Act controlling the diversion, taking and use of water, the construction of sluices, dams, the transmission, sale and use of power, the damming of water-courses, compensation to be paid, fees to be charged for use of water, rates to be charged for power.

The value of the water-powers of the Province was referred to and it was shown that the Province has a number of water-powers capable of development for municipal or private purposes, and that this development would be of great advantage to the success of many small industries. As the results of the reports so far issued by the Commission, the following demonstrates in a brief way the possibilities and values of these resources: "In round figures the estimated capacity of the sites so far investigated is 95,000 h.p. continuously for twenty-four hours daily, every day in the year. After deducting a reasonable loss in electrical generation and transmission, there should be available at the various points of consumption 81,000 h.p. on the same basis as given above."

In 1917 there were 57 times as much capacity available in the Province on sites so far reported upon as was used in the City of Halifax. There is in this Province an abundance of small sites ideal for purely local purposes. But there are many sites which from their location, etc., are well adapted to meet present and prospective industrial needs of the Province. The large precipitation, number of natural storage basis and the nearness of the large power sites to harbors are advantages that make possible their use of hydro-electric purposes, if proper and necessary encouragement was assured.

Mr. Armstrong said that legislation along very similar lines had been adopted in British Columbia, Ontario, and some of the Western provinces. The Federal Government had taken full powers to regulate the use of water-powers in Dominion lands. The idea of protecting the use of water as one of our natural resources for the benefit of the Province was recognized and admitted. Some of the provisions of this proposed Act were taken from the Railway Belt Act as affecting water-powers in British Columbia, which probably contains what is regarded as the latest ideas in necessary legislation.

Industrial Warfare

WHAT IS HAPPENING BEHIND THE DOORS OF THE MAJORITY OF OUR INDUSTRIES Organization the Only Road to Victory

By ROBERT ARKELL

Of Thorne, Mulholland, Howson & McPherson, Industrial Advisors, Toronto

ACCORDING to the returns made to Edward N. Hurley, Vice-chairman of the Federal Trade Commission, out of the 250,000 trading and manufacturing concerns in the United States, over 100,000 earn no net income whatever. In addition, 90,000 make less than \$5,000 a year.

Think of the gigantic proportions of this problem! Only 24 per cent. of our business men—for conditions in Canada are no better — only *one in four*, mark you, is successful enough to earn more than \$5,000 net profits annually. What a keen and relentless struggle is being waged by the 76 per cent.!

Why is it that the overwhelming majority—after an investment of practically all they own—after an astounding expenditure of energy and the most serious thought—in short, after a sacrifice of all that it is humanly possible to make—earn little more than a salary for themselves?

The answer can be given in four words: They are not organized!

What is organization, you ask? A good watch is an excellent illustration: Each part is working in perfect

harmony with all the others. There is no crossing of their lines of action. There is no waste of effort yet there are no "loose ends." The result is near perfection.

Now let us apply these principles to your business. Are the duties of your different department heads so sharply defined that the overlapping of their activities is impossible? If you are one of the 76 per cent. you will have to answer that question in the negative, and thereby admit the absence of an organization's dominating factor, unity of thought, feeling and action from office boy to president—a tremendous force that will batter down all obstacles.

There cannot be harmony where the factory manager, say, does some of the buying and the purchasing department does the rest—for that involves the crossing of their lines of

action—the deliberate courting of friction between your department heads.

How often do you find yourself taking up some matter that has already been dealt with by someone else? That is a waste of effort—a positive loss. And that is only one of a hundred examples in your plant. Add them all and see what it costs you. Then there are "loose ends"—duties that are

a little out of the ordinary — which have not been allotted to anyone in particular: Many important matters are neglected during a year because one department head thinks another is looking after them.

You say you *know* where all your leaks are? Perhaps you do; but the point is: of what *value* is your knowledge—if you are not organized to reap the benefit?

Bore to the root of your trouble!

Read what John D. Rockefeller and other successful men attribute their success to. They point, without hesitation, to their organizations. Their profits are protected at every turn.

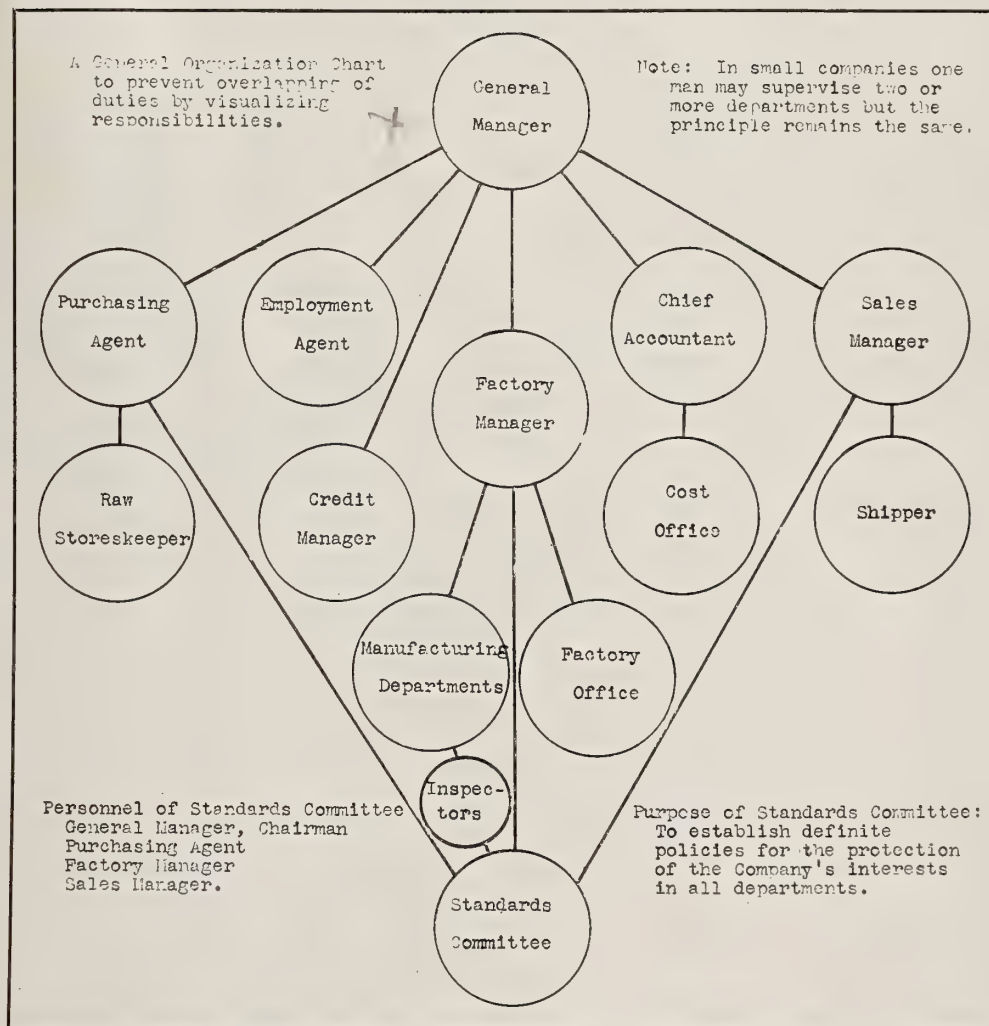
The day of the "one-man" type of management has gone! Is this fact

realized by the average business man who works harder in proportion to his return than any other class in the world? Undoubtedly it is not. He looks upon the advice that he organize as if it were a formidable undertaking—as if it entailed the employment of only \$10,000 men, whereas nothing is further from the truth.

You could make as many divisions of your business as you wish and at the head of each department you could place a specialist, and yet it would be possible for you to be as badly off as before you made the change.

In short, high salaries could drive you into bankruptcy, but an efficient organization *always* works for your success.

Look at the organization chart that accompanies this article and then draw up one of your own. What are your



relations, say, with the factory manager? Has he *always* been to blame when results were poor? Do you provide him with standards that will ensure the minimum of waste—not only of material, but of labor? Or do you give him a free hand with the stores—supply him with all the help you think he needs—tell him weekly to economize—find fault regularly—and then complain of the showing that is made for the year? That's what 76 per cent. of salaried owners do.

Balance Sheet Tells the Tale

You demand a certain value for your money when you buy material and labor and you know you should get so much out of the investment, but the surest proof that you do not receive it is in the balance sheet. The profits are not there.

Organize; that your purchasing department will work hand in hand with your factory. You may save a dollar in your purchasing department by substituting cheaper material, but if it is harder to work you are going to lose it through decreased production. Even that waste you are complaining about may be due to the same policy, each department working for itself.

Individualism must be submerged! Declare peace in your plant to-day! Co-operation pays handsome dividends. Organization will accomplish it for you.

Why should your factory have to wait sometimes for material? Why are you overstocked in some lines and short on others? Why have you so much dead stock in your plant? Because you lack a proper stores system; organization.

Harmonize the efforts of your sales department and factory. It is expensive to be continually "ahead" or "behind." The first condition means an unnecessary increase in your working capital, and the second a loss of trade through dissatisfied customers.

Pick up your catalogue and count the number of varieties you think you make and then count the number that actually pass through your factory. (Salesmen have a habit of making concessions now and then). You may be paid to make changes, but are you paid *enough*? An accurate cost system—the keystone of all organizations—will furnish you with a series of surprises.

And while you are in the factory have a chat with your foremen. They have too much responsibility heaped upon them. Save that time they now spend arguing with each other as to who is to blame for delays and mistakes. Settle important matters by establishing definite policies instead of allowing the foremen to make rulings because they "can't wait." Do not hand them orders in batches to be got out as best they may. Route the orders from your factory office. Control your material from the stores to the finished stockroom. Prevent instead of trying to cure. You pay dearly for leaning so heavily upon your foremen.

The Problem of Labor

You even leave your workmen's future entirely in your foremen's hands. Do all your foremen judge their men solely upon their merits? Do the men have to ask for a raise before they get it? Then why do so many men leave? What does this leak cost you?

Glance over your payroll. It will not take long. How many men do you hire in a year to hold down one man's job? Two? Three? It often runs higher than that. Well, every man who quits, or your foremen discharge, walks away with a certain knowledge of your methods which will have to be taught to the man who takes his place.

Here are seven items in your labor turnover bill:

1st. There is a loss of production caused by the man quitting, and this will continue until someone fills his place.

2nd. It costs something in time to prepare, and in money to insert, the advertisement by which you locate his successor.

3rd. The man has to be interviewed (generally several for every one required).

4th. The man has to be instructed on his duties before he starts.

5th. The new man generally spoils some of his work, and if it is not a total loss—it will have to be gone over again—that takes time, and time is money.

6th. There will be a loss of production until he can keep up with the older help—a handicap not easily overtaken.

7th. He will require closer supervision than the older help until he is their equal.

Place a conservative estimate opposite each of the seven items—total them up and then multiply it by the number of hands who leave. That is what your workmen carry away through improper employment methods.

So stop *to-day* trying to hold profits in a sieve. Graduate from the 76 per cent. class *now*. You are entitled to more than a salary. You can win it through organization. The returns are large and assured.

More Ships in N.S.

Companies Being Formed to Build Ships on the Gulf Coast

There has been a big revival of shipbuilding in Cumberland County, N.S. Over a dozen vessels are on the verge of completion at the shipyards in that district and this awakening has been in effect for the past three years, with news of new ships every day. Up until yesterday there were no signs of activity on the Northumberland shore, but Mr. F. M. Daken of Pugwash, H. J. Logan of Amherst, and Lieut. R. M. Betts of Wallace, got together and expect to have a three-hundred ton vessel under way before many more weeks have been removed from the calendar.

The Cumberland Shipbuilding Company has come into being, and will be located at Pugwash, on the site of the old shipyard owned by the late Col. Bent, near the Clay Works. The site is ideal for transportation purposes—lumber being available by water and rail. It is understood that other Cumberland men are talking seriously of starting ships at Wallace, Fox Harbor and Northport.

Experiment With Lignite

Research Council Gets Appropriation to Build Lignite Briquetting Plant in the West

The Advisory Council for Scientific and Industrial Research has been informed officially that the government has approved the council's recommendation that a plant be erected in the Province of Saskatchewan for briquetting lignite. The Government has provided a sum of \$400,000 for the construction and operation of the plant.

In this undertaking the Dominion Government is acting in co-operation with the governments of the Provinces of Saskatchewan and Manitoba.

The council has received a request from the Ontario Government asking that R. A. Ross, E.E., one of the members of the council, be appointed to act with Arthur Cole, C.E., as a committee to take immediate steps for the development of the peat bogs of Ontario, and the production from them of a merchantable fuel. The Research Council has concurred in these appointments and the investigation will be proceeded with.

Leslie R. Thomson, C.E., who is at present on the staff of the Dominion Bridge Company, has been appointed as secretary to the council.

Trade Opportunities in South America

A Good Place to Look for Business, Since Demand is Strong. Prices are Favorable and There is Money to Meet the Bills; It Offers a Field That Seeks Exploitation and a Period of Prosperity is Ahead for the Pioneers

By EDWARD W. REYNOLDS

MUCH has naturally been said and written about foreign trade. Such matters vitally affect the well-being, present and future, of the Dominion. It is essentially necessary that every manufacturer be asked and encouraged to participate in the nation's foreign trade because there is as much patriotism in helping to create a favorable trade balance as there is in making many patriotic grants.

But in talking and writing of foreign trade, people are perhaps too prone to dwell on possible markets in allied countries in Europe. True there is a demand there; the wastage and wreckage will have to be replaced, and Canada will do her share in helping to build up the wasted areas, but that is not the only incentive to foreign trading. The ideal customer is the one who can participate in some reciprocal trade, and thereby give some assurance of a permanent trade connection. While it is the legitimate ambition of every trading nation to aim at maintaining a favorable trade balance, no country can attain that enviable position, under normal conditions, unless it is governed, to a certain degree, by a give and take policy. If a nation does not sell, it cannot buy. The nation that wants to do all the selling and none of the buying does not figure very largely as a commercial entity.

Here then is a fundamental reason why Canada, those in authority, must assist the manufacturing interests to seek out and maintain international trade relations that will be long standing, providing both parties act in good faith, and all reasonable measures are adopted to see that the individual trading company acts fairly and squarely towards its customers.

Strategic Areas Should be Picked

As much as there are fundamental reasons why a country should embark on a vigorous foreign trade policy, so are there reasons why those directing affairs should pick out strategic areas in which to develop trade connections. In this connection South America is one of the most important trade centres in the world. Trade experts admit that any nation that can control the greatest portion of South American trade can afford to disregard many other large buying communities.

Britain, Germany and the United States, the world's greatest trade protagonists, all realize the importance of getting hold of large slices of South American trade. South America occupies a unique position in the world's trade. It is an immense buyer of the products of North European and North American factories. Practically everything manufactured in the leading nations is represented in the South American markets. It also supplies immense quantities of raw materials out of which the finished products are made. The potential wealth of South America is incalculable. Even yet this wealth is said to have been hardly scratched. The republics are rapidly becoming more stable. Their financial systems have been modernized. The element of possible loss has been minimized. No wonder there is a scramble among many other nations apart from Canada, to get hold of a good share of South American trade.

Great Britain and Germany have for years seen what

Canada and even the United States in some respects has apparently overlooked. Through many years of patient endeavor Germany has been able to build up a connection with some South American republics that cannot be valued in dollars and cents. Some states like that of Brazil have to all intents and purposes been commercially Germanized as Belgium was before the war. Belgium was, commercially speaking, practically an adjunct of Germany, and many South American republics were rapidly assuming a similar position. Despite the fact that many of the South American Governments have sided with the Allies politically and diplomatically, German capital still controls many of the large industries.

What Germany has Done

And in developing this connection Germany has worked as insidiously, as she has persistently, to control—a control that Canada must help eliminate ere it is too late. There are close linguistic alliances with Spain. Sentiment still plays a large part in the personality of the southern half of this continent. Spanish tradition holds sway and Madrid holds a large share of the affection of these people. The upper classes are Spanish in many ways. What Spain would do to-day, many of the "Spanish" republics might do to-morrow, irrespective of the fact that the population of the South has been largely diluted by Italians and other Latin peoples.

Therefore that is why Germany is at pains to maintain the neutrality and friendship of Spain. She wants to ply her tremendous trade with South America through Spain, just as she would trade with the allied countries through Switzerland. Germany may make false steps politically and diplomatically, but she acts with a seemingly greater degree of carefulness in matters of trade. Germany has been very near-sighted and narrow-mindedly selfish in matters political, etc., and she has been just as selfish in matters of trade, as many people have every reason to believe, but she has shown a greater degree of far-sightedness. Her traders are far better traders, from Germany's standpoint, than the diplomats are and have been diplomats, and when they have thought it inadvisable to go at a prospective customer like a bull at a fence, they have devised many very subtle means of approaching him, even to the extent of making him to feel that he is doing business with a totally different personage to a German. When peace comes and Germany is endeavoring to overcome world-hatred, she will go at South America through Spain, and Britain knows this, and is acting accordingly. Yet there are people in authority in Canada who do not realize the opportunities slipping from their grasp.

Great Britain Takes Action

The British Ministry of Reconstruction has a tremendous task on its hands. The problems that department must handle before many months have passed are legion, yet the Right Honorable Dr. Addison has seen the necessity of nursing South American trade. Already special provisions are being made with a view to providing credits in South America for

British firms willing to go after that business. The large financial corporations in Great Britain are pooling their interests with a view to launching a great campaign for even greater commercial expansion, giving special attention to South America, knowing full well that this is where they will meet the German trade expansionist at every corner and in every store. The British consular service in South America is an excellent one. Some people say that it is an improvement on the United States consular service. Where will Canada be? Canada possesses great natural advantages over many other exporting nations, yet she is not taking advantage of them all. Something definite will have to be done if Canada is to reap all she should reap from that vast system of markets. Canada can get many needed things from South America and South America can get lots of supplies of all kinds from Canada.

Our Trade Agency System

One of the first steps the Canadian authorities should deem it advisable to take is to revise its overseas or foreign trade agency system. The plan of locating a commissioner here and there, overworking him, and otherwise making it impossible for him to be of any service to Canadian business men, is antiquated and obsolete. This idea of publishing a trade bulletin containing correspondence and enquiries, three, four and even six months old, is non-effective. Canada wants a really live and up-to-date foreign trade service. Great Britain has totally revised her system, although it was one of the most perfect of its kind in the world. Britain's trade correspondents and commissioners are to be found everywhere. They are ubiquitous, especially in countries where new trade channels are most likely to be opened up. That is why they are to be found so frequently in South America. Canada must reorganize her trade commissionership system too, and do very much what Great Britain has done.

It has been suggested that Canada, being a part of the British Empire, its manufacturers can expect to rely on the advice and assistance of its (Britain's) trade agents, but while this is a fact, it is not a reality. Many Canadian exporters have had some experiences that have taught them many lessons. Here is a case in point: A prominent Canadian manufacturer wanted to do some business with a firm in Venezuela, and succeeded in getting some goods delivered, but this firm had also made some arrangements with a British firm which also endeavored to make delivery of its goods as an evidence of good faith. On the surface it may seem peculiar that firms should ship goods without definite knowledge of acceptance, but the circumstances warranted this departure. Anyway, both consignments arrived within a few days of each other, and both firms wanted their consignments accepted. The question was put to the British Consul to decide, as the purchaser was satisfied with either shipment. He being a British consul, and therefore employed to look after British interests, adopted the wisest course, for him, by deciding in favor of the British firm.

Must Rely on British Consuls

In this connection there is almost universal complaint. Canadian exporters have to rely on many British consuls for assistance, and this assistance is readily accorded so far as these officials are able to render it, but Canadian business men are at a disadvantage in that they cannot get nor expect the same assistance a British firm gets when in competition with others. As the Canadian Government is obviously interested in the extension of the Dominion's foreign trade connections, some steps should be taken towards making it easier

for Canadian manufacturers to participate in foreign trade transactions.

There seems to be more substance in the complaint when the list of personnel and addresses of those engaged in Canada's intelligence service is known. In all, there are twenty trade commissioners, and three commercial agents, the majority of them being located in Europe. There is only one in South America; he is Mr. B. S. Webb, of Buenos Aires, while Mr. J. C. Manzer is stationed at Cuba, and Mr. E. H. S. Flood in the British West Indies. There are agents stationed at Trinidad and Bahamas.

For the rest of South America, Canadian exporters are referred to British Consuls who are located in Brazil, Chile, Mexico, Peru, Uruguay and Venezuela. This is under arrangements made by Sir George Foster, with Sir (now Viscount) Grey, in 1912, when the latter was Foreign Secretary for the British Government. If it is essential for every other nation that looks for foreign trade to have its own consular service in such important trade areas as are to be found in South America, it seems equally important for Canada to improve its commercial intelligence service.

It may be properly asked, why should the commercial intelligence service be improved? Wherein does it fall down? It appears to fall down just where it is expected to be of service. No just criticism can be launched at the Government officials who are hard working, painstaking and eager to be of service, but the very machinery placed in their hands is antiquated, inefficient and unable to carry the load that would otherwise be imposed upon it.

How Trade now Stands

A glance at the trade returns between Canada and the South American republics gives one a somewhat startling understanding of how Canada's trade with the South is on the decline whereas the United States trade is increasing by leaps and bounds. Even the trade of allied countries engrossed in the war more than even Canada is, because of closer proximity to the actual scene of operations, is doing better than Canada.

It has been said that American concerns are approaching Canadian firms with the suggestion of a pact to leave Empire trade alone, providing Canadian firms will leave South American trade alone; that is, the United States firms will concentrate all their energies on obtaining South American trade connections and refrain from competing for trade in the countries within the British Empire providing the Canadian firms keep out of the South American market. If any firm should accede to such a request, the manager is in some ways giving away his rights for a mess of pottage.

The condition of Canadian industry just now is such that more or less quick returns are required. The average firm cannot afford to grant credits for long drawn out periods, and therefore South America is a good place to look for business. The demand is good, prices are good, and there is money to meet the bills. Many astute American firms know this, and are eager to get the field as much as possible to themselves, knowing full well that Canada can become a very menacing competitor for trade if she only demonstrated a willingness to do it. British Empire trade is worth the seeking. Allied sentiment will be one of the inducements, but competition will be keener, trade will be harder to obtain, extended credits will have to be granted. Dealing with European countries is somewhat difficult under any conditions, and therefore it is imperative that the Canadian exporter should not put all his eggs in one basket. Let him spread them round, despite the wiles of a clever industrial competitor. South America is a field that seeks exploitation, and

a period of prosperity is ahead of the manufacturer who joins the vanguard of business men who will go after American trade.

To suggest that Canadians should follow Germany's lead is to give vent to a traitorous utterance, but there are occasions when it is advisable to watch where Germany is going. Her agents never go where there is little to be obtained. There is "pay gold" where German trade commissioners are hovering around in fairly large numbers, and the "Made-in-Germany" sign is up all over South America. Canadians should go there, while, to use a vernacular of the street, "the going is good."

Canada's Trade Dwindling

In practically every report that comes out of South America the record trade returns are referred to. The Governments boast of records going by the board. Hardly ever before in the history of the republics have the returns run into so many figures, yet Canada's trade returns are dwindling. In fact in many cases they are rapidly declining. There is no apparent reason for it, yet the reports issued by the Department of Trade and Commerce at Ottawa prove this assertion.

Take the case of Argentina, which shows an increase in some of the returns, yet those increases are as nothing compared with the increases that have characterized the United States exportations. This is accentuated when it is known that Canada is better fitted, geographically and geologically, to participate in some special lines.

The total trade of Canada with Argentina during 1917 amounted to \$5,000,000 in round figures, a net reduction of twenty per cent. over the total trade of 1913. In merchandise Canada exported \$2,263,824 worth of goods in 1913; that had dropped to \$639,469 by 1915. In 1916, for some reason or other the returns were increased to \$2,398,655, but during 1917 it dropped back to \$1,674,660. Compare these figures with those governing United States trade with Argentina. In 1915 the total exports amounted to \$52,840,965. In 1916 this was increased to \$76,874,258, and in 1917 these returns grew to \$107,641,905. The trend of trade is just the reverse. It is on a steep up-grade, while that of Canada is on the switch-back, with a tendency to go down hill.

Then take the merchandise lists. Canada exports practically everything to Argentina. The list of her annual exports looks very imposing in its length. Every kind of manufacture and produce is listed, just similar to that of an American list; yet while the figures governing the merchandise runs into the hundreds of thousands, Canada's exports run from the tens and twenties to a few hundred dollars. The fact that Canada ships even small quantities proves that she can ship them, and can obtain the business, and it only needs an ability or opportunity to ship in greater quantities for Canada to get some very valuable business.

United States Trade Grows

Comparisons unless made in the proper spirit are always more or less odious, but they always add cogency to an argument. Paraguay is somewhat unknown to the average Canadian, yet, though a very small state, it is a fairly large buyer of imported goods. In three years the Canadian trade returns report the purchase of eighty dollars worth of goods from Canadian houses. Look what has happened in so far as the United States is concerned. In three years the United States increased its purchases from that state by 350 per cent.; the amount was \$97,029 in 1917. But the United States exporters turn round and increase their sales to Paraguayans

by nearly 800 per cent.; the exports amounted to \$452,116 in 1917.

Somewhat similar cases could be cited for Bolivia, Brazil, Chile, Peru, etc. While the American exporter has been increasing his business the Canadian has apparently been letting things slide. In the interest of Canada's post-war expansion there should be an absolute reversal of trade conditions between Canada and the South American republics. Millions of dollars are slipping away from Canada which could be turned back by the expenditure of a few thousands. To reverse the tide a strong policy must be devised. The authorities must take firm hold of the situation. The manufacturing interests obviously cannot do this themselves. They need the guidance of an authoritative hand. A Government trade commission, consisting of practical trade experts, should be sent South to study local conditions and make recommendations which the Government should act upon. Otherwise Canada will lose valuable trade connections for all time.

Steel for Japan

Possibilities of an Export Market for Iron and Steel in Japan if Industry is Established in British Columbia

There is a splendid future for British Columbia in the development of the iron and steel industry with relation to the Oriental market, in the opinion of Mr. S. Ukita, Japanese Consul at Vancouver. Mr. Ukita is quoted as having stated in Vancouver recently that Japan has to import her steel and pig iron, and would welcome the chance to secure these from British Columbia, which is but ten days' journey by steamer. Steel imported from the United States, more especially steel from the Eastern States, could not hope to compete with British Columbia steel insofar as freight rates were concerned, he said. "Without the Orient to absorb your surplus production you might find difficulty in successfully establishing a steel plant in the province," Mr. Ukita said. "Japan, however, requires steel and pig iron and you will have no trouble in opening up a good market in the Far East. *In fact, I feel sure that it would not be a very difficult matter to induce Japanese capitalists to interest themselves in the establishment of such an industry as is proposed for British Columbia.*"

What Must Be Marked

Amendment to Inspection and Sale Act Requires Name and Address and Name and Amount of Contents

The bill introduced by the Minister of Trade and Commerce, to amend the Inspection and Sale Act, and which received its first reading on the 22nd ult., does not require the manufacturer to print on the carton or wrapper the date of packing, but it requires him (a) to put on his own name and address, and (b) to put on the name of the article in such container, and the net weight, measure, or count of contents. Containers not so marked are liable to seizure.

Wood is to be sold by cord, defined, and in the case of Portland cement, the weight of the bag and the barrel thereof is defined.

A novel provision is that which requires that a dozen eggs shall weigh not less than a pound and a half.

The Act will not apply to articles now in stock. The date when the Act comes into force is the 1st of January, 1919.

Conservation of Fuel in Boiler Rooms

The Economical Burning of Coal Should be a Matter of First Importance to Any Manufacturer with His Country's Welfare at Heart, and in this Article Useful Advice is Given by an Expert as to How Coal May be Saved in Factories

By W. A. SWEET

IN view of the very serious character of the fuel problem which confronts people in all walks of life throughout the country, in fact throughout the continent, it behooves every consumer of coal, now a precious commodity, to exercise his best efforts to its conservation.

A long step in the proper direction may be taken by carefully studying the conditions of the steam plant, and it is the purpose of this article to point out some of the essential features of such study necessary to the attainment of the desired results.

One of the prerequisites to the economical operation of any steam plant is a condition of full co-operation between employer and engineer. The employer should make it a part of his duty to call around at the engine or boiler-room frequently and have a few minutes' heart-to-heart talk with the engineer. Ask him if he has any suggestions which would help towards economical operation of the plant. If he is alive to the situation he will undoubtedly have something to offer. Go thoroughly and seriously into any suggestion he may make, in this way getting to the bottom of things; also giving the engineer to understand that his watchfulness is appreciated.

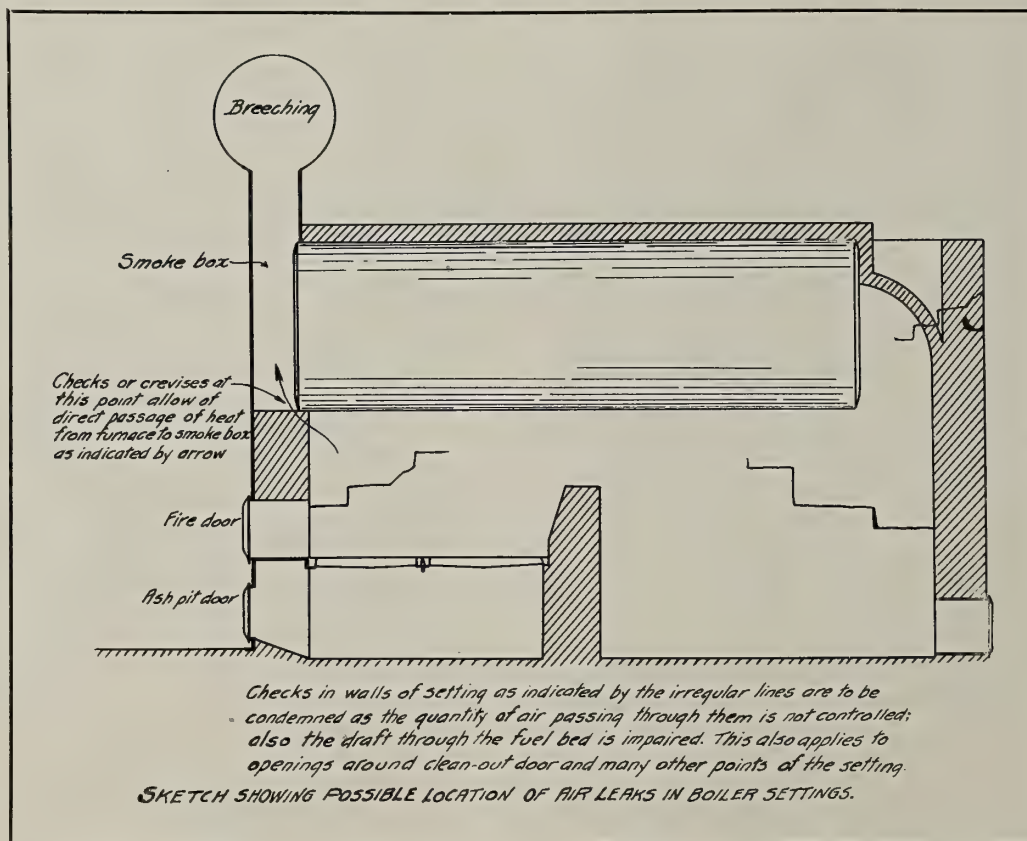
Many manufacturers consider their engineer just an ordinary employee, who puts in his allotted number of hours on shift, sees that things are kept running, and draws his pay. As a matter of fact the engineer controls that end, which if not diligently and intelligently watched, will be productive of waste in fuel to an extravagant degree.

The writer is firmly convinced that if a steam plant is of any appreciable size it should be operated under the direction of a technically trained man. The trouble here, however, is that the majority of manufacturers refuse to pay wages which will secure such men. They rather persist in going on from year to year with the ordinary practical man, and in all probability lose through inefficient operation much more than

any difference in salaries would amount to. It is not the intention to disparage the value of the practical man, but if we combine practice with theory then we achieve the ideal condition. Up to recent years it was considered that any man who could handle a shovel and throw coal under a boiler was capable of firing, the fact that economical firing is a matter of science being lost sight of. If many of the manufacturing concerns were to conduct their business transactions on a par

with their boiler-room operation, they would be creating a harvest for the legal profession and bankruptcy for their business.

The economical burning of coal, and thus the conservation of the country's limited supply, should be a matter of first importance to any manufacturer with his country's welfare at heart. Wasteful use of coal is in reality a more serious offence than the waste of food, since coal is the basis for the supply of large quantities of food and munitions to our own soldiers



at the front and to our Allies. The coal problem has been for some time past and even now is of prime importance. It requires not only the careful attention of the consumer, but the attention as well of the technically trained man to work out methods of best conserving its supply in the future. The writer would, therefore, urge university students and graduates to give this matter earnest consideration, so essential is it to the welfare of the country both in our industrial and economical sense.

Since we have dwelt to some extent in a general way on the management of the steam plant, let us now turn our attention to problems to be met and overcome in the actual process of converting fuel into steam.

One of the first faults to be eliminated in the boiler-room is waste. A boiler-room in a dirty and unkept condition is always an indication of waste to a greater or less degree. If the floor is strewn with ashes intermingled with coal, it is very evident that some of the coal is being passed along to

the ash pile unused and therefore wasted. The management should make it a practice to watch the ash heap for indications of wasted coal, and where such indications are found, take immediate steps to remedy the situation.

Now, let us examine the boilers themselves and their settings. We all know that a deposit of soot is a very poor conductor of heat. If the boiler tubes are found covered with soot, more frequent cleaning should be insisted upon.

Cold air admitted to the furnace and combustion chamber of a boiler at an improper point is very detrimental to the efficient operation of the boiler. This fact makes essential the periodic and thorough inspection of the boiler setting to discover checks in the brick-work or other crevices through which air might leak. When air leaks are found, they should be stopped at once. This may be done, if nothing better is at hand, by the use of old waste, asbestos pipe-covering, cement or lime and sand mortar, fire-clay, etc.

Watch the Smoke-box Constantly

Another point deserving of constant inspection is the smoke-box. Open the smoke-box doors in the front of the boiler and examine the brick-work very carefully. If there are any cracks in this part of the setting, it means that a certain amount of heat from the fire, instead of taking the proper course under the boiler and returning through the tubes, is passing through the crevices directly to the smoke-stack and is not utilized. In this case, suppose that six tons of coal are burned per day for a 365-day year, and that 5 per cent. of the effective heat is lost on account of crevices mentioned above. Calculation shows that 109.5 tons of coal per year will be wasted, a sufficient quantity to operate the boiler for eighteen 24-hour days.

In the case of cracks in the boiler setting and furnace walls allowing cold air to enter above the fire, the amount of effective heat loss may easily vary from 10 to 30 per cent. It must be remembered also that all brick are porous in a variable degree, and all settings should be treated with paint or one of the many preparations on the market for the purpose of making the brick-work non-porous.

Air should be admitted to the boiler furnace either through the fuel-bed or in the immediate vicinity of the fire-door. In entering the furnace by these channels the air becomes heated before reaching the region where combustion of the gases leaving the coal takes place and is in much better condition to assist in bringing about complete combustion (the ideal condition), than if admitted at improper points as explained. Apparently the days of hand-firing boilers are numbered, and rightly so. There has been during the past few years a goodly variety of mechanical stokers placed on the market. These stokers may be designed in such a manner as to successfully handle almost any class of coal and to fit almost any type or size of boiler. They, in nearly all instances, give results superior to those attained by hand-firing, for the simple reason that the cooling effect of the large quantity of cold air which rushes into the furnace every time the fireman opens the fire-door to add fresh fuel is eliminated. It is believed that wherever possible mechanical stokers should be installed in plants of any appreciable size.

A Little Good Advice

Enquire of neighboring plants to locate mechanical stokers installed, and make it your business to visit such plants and to require your engineer and fireman to visit there and see the stokers in operation. The greater the variety of stokers in operation visited the better. Require your engineer and fireman to submit a report on each type of stoker, setting forth its merits or demerits as the case may be, and giving reasons why it should or should not be installed in your plant. Another helpful thing is to secure from as many stoker

manufacturers as possible catalogues and descriptive literature covering their products of this character. Turn these catalogues over to your engineer or fireman requesting him to carefully study them and then report to you, giving their unbiased opinion as to the possibilities of such apparatus installed at your plant. By making a study of such literature, your engineer and fireman cannot help absorbing some information which will be of benefit to them in their hand-firing.

A professor of chemistry once said that the old method of placing the fuel on the top of the fire is the correct way to secure proper distillation of coal, providing the operation could be done without opening firing doors, or without placing large quantities of coal on the fire at one time. This has been accomplished by a mechanical stoker now being manufactured, which places the coal constantly on top of the fire in as large or small quantities as may be required.

Some stokers place fuel underneath the fire and distillation takes place here rather than at the surface of the fire-bed.

There are still other mechanical stokers so arranged that the coal is coked before entering the main part of the furnace.

There are of course arguments for all types of mechanical stokers and it is imperative to make a study of a number of different types before coming to a decision as to which, from all points of view, is best applicable to your furnace.

[Mr. Sweet will continue his discussion of this highly important subject in the June issue.—EDITOR.]

An Expanding Industry

B.C. Cedar Shingle Production Was on a Much Larger Scale in 1917 than the Previous Year

The year 1917 was the best year in the history of the B. C. shingle industry, both foreign and home shipments being ahead of the biggest previous year. The value of the total production was \$7,609,834, of which \$5,182,856 was the value of shingles shipped to the United States and \$2,426,998 shipments within the Dominion. In 1916 the production was 1,900,000 thousand shingles and last year this was increased to 2,278,205 thousand. Shingles were exported to the United States, according to United States consular reports, as follows:

1st Quarter, 265,991 M. value.....	\$ 856,926
2nd Quarter, 408,958 M. value.....	1,533,390
3rd Quarter, 314,066 M. value.....	1,172,084
4th Quarter, 422,405 M. value.....	1,620,456

Total, 1,411,420 M.\$ 5,182,856

Some idea of the extent of the industry in the province may be gained from the fact that last year's production would require over 10,000 cars to move it; or, in other words, a train of thirty-five cars every working day of the year.

There were about 340 machines in the province, 20 per cent. operating day and night, the balance in days only. The shingles found a very ready sale in the United States and Canada principally on account of the fact that the farmers have been enjoying exceptional years of prosperity and used large quantities of shingles for building. As yet manufacturers have not been able to make any satisfactory estimate of this year's business, conditions being very unsettled insofar as they affect the shingle production.

It is worthy of note that the red cedar shingle is on the increase, despite the big competition from patent roofings. Manufacturers give credit to the extensive advertising campaign carried on during the last few years on behalf of the red cedar shingle for its popularity and the fact that it has been able to withstand competition.

Proposed Dominion Bankruptcy Act Defects

Under the Proposed System Responsibility for the Success or Failure of the System
Would be Distributed Among the Courts and Officials of Nine Provinces
and Unless There Were Some Central Authority, it Would
Take its Own Course in Each Locality

By H. MACDONALD

THE proposed Bankruptcy Act for Canada, drafted by Mr. H. P. Gundy, barrister, Winnipeg, and introduced in the Dominion Legislature by Mr. S. W. Jacobs, K.C., M.P., of the Montreal Bar, has received its first reading and was referred to a Special Committee of the House. It has since been the subject of lively discussion amongst commercial heads. It affirms that amongst the civilized countries of the world Canada stands in the unique position, with a grotesque exception in favor of China and Japan, of having no bankruptcy law.

The Canadian Manufacturers Association has on various occasions during the past five years placed itself on record as favoring the general principle of a bankruptcy measure, without committing itself in respect to details. The chief objects to be obtained by a Bankruptcy Act over the present system of dealing with insolvencies are (1) a uniform, efficient and economical method of winding up insolvent estates, and (2) a method of discharging honest bankrupts.

Variety of Legislation

In Canada, as in Great Britain and the United States, a variety of forms of Bankruptcy Acts have been tried and found deficient. In Great Britain and the United States successful systems are finally worked out. In Canada the attempt was abandoned in 1880. It would be regrettable, to put it mildly, if Canada were now to embark on a new course of experimentation without reckoning with the experience of the past.

Since the repeal of the last Canadian Bankruptcy Act in 1880 insolvent estates have been dealt with under provincial laws. These laws could regulate the disposition of the property of insolvent persons and prevent unjust preferences amongst creditors, but the provinces have no power under the British North America Act to pass legislation dealing with the discharge of bankrupts. The provincial laws vary with the different provinces, though in all except the Province of Quebec the law is based generally on British precedents.

The natural and proper tendency in framing a Bankruptcy Act for Canada is to follow British precedents. But this should not be done without careful regard for the fundamental differences in the constitutions of the two countries. In Great Britain legislative power is centred in one body, the British Parliament. In Canada legislative jurisdiction is divided between the provinces and the Dominion. In making the changes necessary to adapt the British Act to the federal constitution of Canada it is important to calculate the effect of these changes in the application of the Act to conditions as they exist in Canada.

Amongst the defects which brought former systems in Canada (and other countries) into disrepute were the following:

1. Dissipating of the estate in costs of administration.
2. Manufacture of fraudulent claims.
3. Discharge of undeserving debtors.

The following have been assigned as the causes of these defects:

1. Lack of proper control over the administration of the estate.
2. Administration of estates by appointed officials.
3. Absence of control by creditors.
4. Too great facility, by composition deeds and otherwise, in obtaining discharge of debtors.
5. Want of public examination of the debtor.
6. Want of sufficient penalties for dishonest or reckless conduct, or for violations of the principles of commercial morality.

It will be observed that the defects above mentioned have had to do more with *administration* than with rules of law. The general principles of every Bankruptcy Act in Canada as well as in the United States and Great Britain have been the same. The intention of the law has been good, and the defects, so far as they have arisen out of the law, have been due to a lack of imagination on the part of the legislators as to the manner in which the provisions of the law would work out in practice.

The two chief considerations in connection with a bankruptcy system being the *administration* of the estate and the discharge of the bankrupt, the success of the system depends less on rules of law than on business efficiency. The less of law and law-suits the more there is likely to be for the creditors. Excellent results have been shown under existing laws by efficient *administration* by such bodies as the Credit Men's Trust Association. The difficulty is that owing to the state of law and practice in some of the provinces it is impossible for the creditors to secure a proper direction of the insolvent estate. The creation of facilities for discharging bankrupts would increase rather than decrease these difficulties unless a proper practice under proper supervision could be worked out in each of the provinces.

The Most Important Factor

It is not sufficient that the rules of practice should be uniform in the different provinces. The important factor is the *morale* of the administration; and the exercise of good judgment in the questions that arise in connection with the administration. These questions are chiefly matters of accountancy and business judgment rather than of law.

The importance of having bankruptcy law controlled by central authority is recognized by the British North America Act in placing the subject under Dominion jurisdiction. The proposal of the bill now before Parliament is to leave the system in its most important feature, viz.: administration and practice, to the provincial courts. It is safe to say that in no other country with a federal constitution would such a proposal be seriously considered. It is a common characteristic of federal countries that variations exist in view and practice as between the different local divisions. Canada is no exception to this rule. The object of a federal system of Government is to ensure uniformity of treatment in certain matters of which bankruptcy is an outstanding example.

If the most important feature of a bankruptcy law, viz.: its administration, were to be left to the provincial authorities the object in making it the subject of federal jurisdiction would be largely frustrated.

It is true that the Judges, including County Court Judges, are appointed by the Dominion, but it is also true that each province has its own judicial traditions and characteristics which would nowhere find larger scope than in the treatment of a subject like bankruptcy.

The importance of some degree of centralization is recognized by the bill under consideration. Provision is made in section 134 for the making of general rules and forms for carrying into effect the objects of the Act. No formal rule, however, could go to the root of the most difficult questions that would come up in bankruptcy proceedings. It is just as impossible to control the administration of a bankruptcy system by rules as it would be to control the management of a business by such a method.

Distribute the Responsibility

Under the proposed system responsibility for the success or failure of the system would be distributed amongst the courts and officials in the nine provinces and the Yukon Territory. The Courts are at best loth to assume responsibility and are usually ready to follow precedents once laid down. Unless there were some central authority, for example a Dominion Commission in Bankruptcy, to direct the course of practice under the Act it would take its own course in each locality. The appeal to the Supreme Court of Canada could have no real influence because it would be effective only in matters of law, and then only in those cases where an appeal happened to be brought.

In view of the considerations briefly mentioned above the following suggestions and observations are submitted:

1. The Act ought to provide for a central head responsible for the more important features of administration.
2. There should be a central office in which records should be filed and to which recourse would be had for information.
3. Provision should be made whereby the central office could influence, if not control the policy to be pursued throughout Canada in the matter of the discharge of bankrupts.
4. It should be one of the functions of the central office to give advice, more or less informally, to trustees in the administration of estates.
5. The auditing of accounts of all estates should be finally checked up by the central office, and the discharge of trustees regulated.
6. The question to what extent Judges or Judicial Officers should be subject to the central office could be left open. An analogy is to be found in the functions of the "Official Guardian" in Ontario.
7. If the Judges of the present Provincial Courts are to be utilized they should be specifically designated and accredited by the Dominion as in the case of the Admiralty Judges.
8. The Registrars and other officials should also be specially designated by and responsible to Dominion authority.

Since the foregoing article was written, Hon. Hugh Guthrie, Solicitor-General, states that the Special Committee which was considering the bill concluded its labors on May 7th. A great many amendments were made to the original draft, and the Committee has asked that the bill be reprinted and a sufficient number of copies published to permit of its being well circulated among financial, mercantile, banking and other interests throughout the country. It is not expected that the bill will be further proceeded with during the present session of Parliament.

Curtailing Railroad Activities

Action of U. S. Director-General of Railroads Points to Eventual Government Ownership, or at Least Permanent Government Control

(From the "Traffic World")

The axe of the Director-General of Railroads has fallen, or is about to fall, so it is announced from Washington, on a number of railroad associations, organizations, and activities, many of which are already specified. In general, the test applied seems to be whether the activity in question is necessary under government operation with competition abolished.

We have said before, when this action seemed imminent, and we repeat now, that we do not think it proper or wise to the extent that it is being put into effect. Undoubtedly government operation makes necessary many changes in methods. If there were to be no changes there would be no need of government operation. But we protest that only changes which expedite the movement of traffic should be made. They were the only changes that were contemplated in turning from private to government operation. The need of greater efficiency in this respect was the need that brought about government control. Now the Railroad Administration is proceeding on the theory that it controls the destinies of the roads and is responsible for all their business methods.

It is true that the roads may continue these activities if they desire, paying for them out of the money the government pays to them for the use of their properties, but few if any may be expected to be continued in this way. If they are proper at all, they are proper charges to the cost of running the railroads and most roads will be unwilling and many will be unable to pay for these things in any other way, however much they may wish they could be continued.

Though many of the activities discontinued are unnecessary, under the theory that the government is in control and has no obligation to do other than save as much money as it can now that it is in the saddle, some of them ought to be continued under operating expense, nevertheless. For instance, the statistical bureaus—some of them at least—have served a valuable purpose and would still do so. Are we to be without these compilations merely because the government does not feel the need of paying someone to keep tab on the results of its methods? Or does the government propose to furnish figures in some other way? So far as the order of the Director-General can bring it about, the railroads are now to be run by the government exactly as if it owned them; they are to have no voice in anything, no opinions about anything that is proposed, and can have no policy, and no means of building up a policy with respect to the future. Railroad employees, from the president to the section hand, work for the government, not only for the present, when they are glad to do so in the war emergency, but, so far as they are able to foresee or plan, for all the future. If the order results in the abject submission, which there is a growing belief that those behind it hope for, there can be little in store for the railroads but government ownership, or, at the least, permanent government control. They will have no means left of fighting it or of showing effectively the fallacies of the system that it seems to be desired to impose on the country.

The order, of course, must be obeyed, but it is to be hoped that those who have their money in railroads or who are interested as good citizens with a desire to bring about the best economic solution of the railroad problem will see the danger and take what means are necessary to meet it.

Suggestions to Express Shippers

Express Traffic Association of Canada Issues Another Bulletin in the Interest of Efficient Service

1. Pack glass and fragile articles in wooden boxes or strong corrugated paper cartons, using plenty of excelsior or similar packing, and marking "Glass."
 2. Obliterate old marks on boxes or wrappings—they frequently send packages astray.
 3. Large or heavy packages of merchandise should not be wrapped in paper or tied with string, because the most careful handling will not then prevent delivery in torn and damaged condition.
 4. Put your name and address on outside of package under the word "From." Put your name and address and name and address of consignee *inside* the package as well. If outside mark is lost or destroyed this may facilitate delivery.
 5. Do not advertise nature of contents on outside of packages containing valuable merchandise such as ladies' waists, silk shirts, silk stockings, etc.
 6. Do not use a tag if condition of package will permit marking with ink. Tags become lost.
 7. Castings and similar shipments, when not boxed or crated, or when impossible to mark with paint, should be addressed with good linen or strong manilla tags, wired on, and an additional tag (bearing same address) should be bound to the article with burlap covering.
 8. Raw Furs or Skins, if in hand-made bales, should be securely stitched in burlap or bag, and marked on a smooth wooden strip sewed flat to the bale. The oil in the skins destroys ordinary marking.
 9. Bedding, Carpets and Rugs, when not boxed or crated, should be sewed up in burlap or some other substantial cloth covering, and marked with stencil or brush; tags should not be used.
 10. Send Money and Jewelry in sealed packages through Money Department. Never in unsealed packages.
 11. If shipment is C.O.D. (Bill with Goods) mark plainly "C.O.D. \$....." Unless specific instructions to the contrary are given by the shipper, the charge for collecting and remitting the money will be collected from consignee. Prepare a C.O.D. Envelope to accompany the shipment. Shipper's name and address must be plainly shown on shipment and on C.O.D. Envelope. Write same information in receipt.
 12. Write the value of shipment in proper space in the receipt. If the shipper does not declare and enter the value in the receipt the liability of the company is limited to \$50. The charge is the same when value is declared at \$50 or less; an extra charge is made when the value declared exceeds \$50.
 13. In addressing always show correct street and number.
 14. Because of similar town names, the county should be shown. Abbreviations are misleading—spell out the names of provinces and states.
 15. If charges are prepaid, mark the shipment plainly "Prepaid." If package is addressed on more than one side, write the word "Prepaid" wherever the address appears.
 16. *United States Business.*—If shipment is destined to the United States, Owner's or Agent's Export Entry in duplicate, in form as ordered by the Department of Customs, Canada, must be filled in and forwarded with the shipment. Duplicate certified invoice must also be furnished by the shipper. If the value exceeds \$100, shipper must also furnish United States Consular invoices. Shipments of meat of all kinds must also be accompanied by Meat Inspection Certificates in triplicate (Dept. of Agriculture, Canada, H. of A. form 36.) Mark the value plainly on outside of all shipments.
- Express companies generally furnish necessary blank forms on request.

Service on the Great Lakes

Seven Steamships Will Ply Between Chicago and Buffalo Relieving the Pressure on the Railroads

The Railroad Administration of the United States on April 18th established a lake line service between Chicago and Milwaukee and Buffalo, under the name of the Lehigh Valley Transportation Company. Seven large, modern electric-lighted steamships have been assigned to the service, using as a nucleus two of the ships owned by the Lehigh Valley Railroad, whose right to continue the operation of the lake line service is now in litigation, and five ships chartered from the Great Lakes Transit Corporation, which purchased a number of the railroad-owned boats after they were required to give up their operation of the lake line service. It is stated that additional ships will be added as the service requires. The purpose is to relieve the car situation as much as possible. Cars that have been held up on western railroads by the congestion on central railroads will be released with the opening of lake navigation, and the loads may be moved east by the way of the lakes and railroad lines east of Buffalo, thereby relieving the railroads in the Central Freight Association territory by a saving of power, fuel and cars that can be devoted to other business. It is expected that shippers of heavy staple commodities from the East, such as sugar, coffee and manufactured articles, will also take advantage of the service. It is intended to work night and day shifts at the terminal points, so that the boats can be turned rapidly and afford the greatest possible relief to the railroads. The eastern trunk lines will be served over a common terminal at Buffalo. All-rail rates will prevail in both directions, so that in case of congestion on the railroads the freight can be immediately diverted through the lake and give continuous movement to destination. The lake rates, however, will improve marine insurance.

Will Operate Erie Canal

United States Government Takes Control and Will Operate a Line of Barges Between Buffalo and the Atlantic

The Federal Government has taken control of New York State's canal system and will equip it with barges. The canal will be operated by Director-General McAdoo, Secretary of the Treasury, as a part of the transportation system of the country.

New York State has been urging the Government to take charge of its canals, which are still without boats, although they will open within a few weeks, and lake navigation has already begun.

The Merchants' Association has been actively interested in the endeavor to supply proper equipment for the canals.

Mr. G. A. Tomlinson, of Duluth, who is a member of the Federal Canal Survey Board, has been placed in charge of the operation of the canals and of the construction of boats.

This is the first canal to pass under Government control. It is expected that the Chesapeake and Ohio Canal, the Black Warrior River in Alabama, and some of the Atlantic Coast waterways will also be taken over.

The Director-General announced that "he had decided to construct as quickly as possible and put into operation a line of barges to be operated by the Government on the Erie Canal."

"The barges," the announcement continued, "will be of modern construction of the most improved type, and will be operated in conjunction with and as a part of the general railroad and waterways transportation system of the country

under the control of the Director-General of Railroads. This will insure the complete co-ordination of the Erie Canal facilities with the railroad facilities, and, it is hoped, will greatly enlarge the available transportation facilities throughout eastern territory.

"Mr. G. A. Tomlinson, of Duluth, Minnesota, a man of large practical experience in lake navigation, has been appointed general manager of the Erie Canal operations, including the construction of the barges and general equipment. Under Government control of the railroads and the canal there can be diverted to the canal all of the traffic that can be handled to the best advantage by water, and the canal be made in the highest degree serviceable in the present situation."

Several hundred steel barges of about 700 tons each will be ordered immediately from construction companies on the Great Lakes, and the first of these probably can be completed in five or six weeks. Each will cost about \$60,000.

The New York State Barge Canal can carry 10,000,000 tons of freight in a full season. It is proposed to bring grain from the Great Lakes to New York Harbor, where it will be transhipped abroad. Coal will be brought from Pennsylvania through the Finger Lake Canals from Ithaca and Watkins, and will be transhipped from the Upper Hudson by rail to New England.

Governor Whitman has given his cordial approval to the action of the Government in taking over the canals, which are more than 630 miles in length. The state has spent \$150,000,000 for improving the system within the last thirteen years. Despite this great outlay there are no barges for operation on the canal, and a bill in the last Legislature, authorizing the expenditure of \$2,000,000 by the state for building barges, was defeated. The action taken by the Government will insure the proper equipment of the canal and its operation in a manner that should afford important relief to the railroad system.

New Brunswick Compensation

Act Passes the Legislature, but in a Form Displeasing to the Manufacturers of the Province

On page 1781 of the April issue of *INDUSTRIAL CANADA* there was published the text of the report on workmen's compensation presented to the Provincial Legislature by the commission appointed to make inquiry into the subject. On the basis of the commission's recommendations a bill was introduced at the recent session of the House, which, after considerable discussion and modification, was duly enacted into law.

Writing from Fredericton, on May 1st, J. A. Reid, Hartt Boot & Shoe Co., Limited, chairman of the Legislation Committee for New Brunswick of the Maritime Branch, C.M.A., says: "I presume that you have probably noticed by the press that the Act passed the Legislature. It has been murdered more or less. I have not yet seen the amendments, but, as near as I can find out, little attention has been paid to the chief points that the committee laid before the Government, such as an absolute waiting period. I understand they ignored our request altogether with reference to the same, and apparently, where there was anything at all contentious between the manufacturer and the employee, they catered to the latter, no matter how clearly matters were laid before them from the manufacturer's standpoint. The Government were also apparently frightened by the lumbermen, as lumbering, steam-driving, etc., have, I understand, been exempted in Section 84, along with the farm laborers. I might also state that employees of retail merchants have also been exempted. The result of eliminating the lumbermen will mean that the cost of administration will be so high that it

will probably kill the working of the Act entirely. What I believe the manufacturers of this province should do would be to frame up some sort of an ultimatum and present to the Government, that they would absolutely refuse to recognize the Act, for the reason that one industry has no more right to be exempted from it than another. The other minor amendments suggested by our committee, I understand, have been embodied in the bill, but, as stated above, the whole Act has been botched by eliminating the lumbering interests and by not providing an absolute waiting period."

New Sardine Plant

Large Factory is Under Construction at West St. John by Booth Fisheries Co., of Chicago

The first sardine-packing plant to be established in St. John, N.B., is now being erected at West St. John, above Navy Island, by the Booth Fisheries Company of Chicago, who have large fishery establishments at Eastport, Belfast, Lubec, Machiasport, Chamcook, N.B., and other points on the Atlantic coast.

The new plant will be wood, 234 x 45 feet long, and two storeys in height. It will cost about \$75,000, and will be provided at the outset with an equipment capable of packing one hundred hogsheads of fish per day. This result, of course, can not be obtained the first season, as many of the workers will be new to the business and will require some practice before they become proficient packers. The fish supply will also be a factor in the output and it will likewise determine the brands or qualities to be packed.

About 150 workers, chiefly women and girls, will be employed in the new factory. As it is to be established on thoroughly sanitary lines, it will not only be comparatively odorless, but every care will be given to the health and comfort of the employees, so as to attract and hold the best class of workers.

In addition to the factory building that is now being rushed into shape, a wharf 160 feet long with a face of 50 feet is being added to the present wharf.

The fish supply is expected to come chiefly from harbor weirs and from the weirs in the Bay of Fundy east of Point Lepreaux. The presence of a factory at St. John may also lead to the erection of weirs farther up the bay.

The sardine industry of the Bay of Fundy dates back a little over thirty years. Eastport was the original home of the industry, but it has spread to Lubec, Jonesport, Belfast, Pembroke, Robbinston, Machiasport, Stockton Springs, and as far west as Portland, as well as to Chamcook, Fairhaven, L'Etang and Black's Harbor in New Brunswick.

Among the early sardine manufacturers were Wolf, Reesing, Williams, Lawrence, Holmes, Blanchard, Clark, Grady, Milliken, Balkam, Hartt, Abernethy and others. In recent years large sardine corporations have sprung into existence, among the largest of these being the Booth Fisheries Company and the Sea Coast Packing Company.

About 75 per cent. of the raw fish packed in the Eastern Maine factories has come from weirs on the New Brunswick side of the Bay, though the number of weirs and traps on the Maine coast is gradually increasing. For the fiscal year 1916-17, the total catch of sardines in Bay of Fundy waters as per Government report, was 315,832 barrels, valued at \$789,701. The total marketed value of the catch, canned or otherwise disposed of, was \$1,481,261.

The "sardine" of the Bay of Fundy is a young herring, while the sardines of Europe, of the West Indies, Florida and California is a small adult fish of the pilchard species. When properly packed, the Bay of Fundy fish is quite the equal of the European variety.

Matters of Importance Affecting the Tariff

Remission of Duty on Imported Commodities Used in Canada in the Manufacture of Tractors—Prohibition of the Exportation of Clear Douglas Fir—The New Revenue Duties on Various Commodities

(Published by the Tariff Department, C.M.A.)

Customs' Orders and Rulings

The following Order-in-Council, dated the 26th day of March, 1918, authorized remission of duty on imported commodities used in Canada in the manufacture of tractors. This Order-in-Council was made necessary by reason of the Order-in-Council of February 8th, 1918, under which traction engines costing not more than \$1,400 each, and parts therefor for repairs, were authorized importation free of duty. The Order-in-Council of March 26th follows:—

HIS EXCELLENCY THE GOVERNOR-GENERAL IN COUNCIL.

His Excellency the Governor-General in Council, on the recommendation of the Acting Minister of Finance and under the provisions of Section 286 of the Customs Act, is pleased to make the following Regulations, respecting drawback of Customs duty on imported goods used between the thirtieth day of November, one thousand nine hundred and seventeen, and the eighth day of February, one thousand nine hundred and nineteen, in the manufacture of gas or gasoline traction engines for farm purposes and repairs therefor, and the said Regulations are hereby made and established accordingly:—

REGULATIONS.

1. When imported materials, on which Customs duties have been paid, are used between the 30th day of November, 1917, and the 8th day of February, 1919, in the manufacture of gas or gasoline traction engines for farm purposes and repairs therefor, there may be paid a drawback of ninety-nine per centum of the duties paid on the materials so used.

2. The said drawback may be paid to the manufacturer of the gas or gasoline traction engines and repairs therefor, costing not more than \$1,400.00, subject to the following conditions, viz.:—

(a) The quantity of materials used and amount of duties paid thereon shall be ascertained;

(b) Satisfactory evidence shall be furnished in respect to the manufacture in Canada of the gas or gasoline traction engines and repairs therefor.

3. The claim for drawback shall be verified under oath before a Collector of Customs to the satisfaction of the Minister of Customs, in such form as he shall prescribe, within one year after the manufacture of the gas or gasoline traction engines and repairs therefor. The Minister may also require in any case the production of such further evidence, in addition to the usual averments, as he deems necessary to establish the *bona fides* of the claim.

Platinum—By Order-in-Council, dated the 5th day of April, 1918, the exportation of platinum from Canada is prohibited to all destinations except under license issued by the Minister of Customs on the recommendation of the Canada War Trade Board.

Caustic Soda—By Order-in-Council, dated the 11th day of April, 1918, the exportation of caustic soda or sodium hydroxide is prohibited to all destinations outside of Canada, except under license issued by the Commissioner of Customs at the request of the Canada War Trade Board.

Douglas Fir—By Order-in-Council, dated the 11th day of April, 1918, the exportation of wood, namely Clear Douglas

Fir, is prohibited to all destinations abroad, other than the United Kingdom, British possessions and protectorates, viz.,

Wood, namely Clear Douglas Fir—No railway or other transportation company shall accept any shipment of Clear Douglas Fir unless the bill of lading covering such shipment is accompanied by a certificate, from a well recognized lumber inspection bureau or association appointed by the War Trade Board, that such shipments contain no Clear Douglas Fir suitable for use in the manufacture of aeroplanes; provided that this regulation shall not apply to shipments of Clear Douglas Fir consigned to the Imperial Munitions Board, or such shipments as have been licensed for export by the War Trade Board.

Every railway or other transportation company which fails or neglects to comply with the requirements of these regulations shall be guilty of an offence and liable upon summary conviction under Part 15 of the Criminal Code to a penalty of five hundred dollars.

By Appraiser's Bulletin No. 1715, the following Board of Customs decision is communicated to collectors of customs:

"Hard soap (not being whale oil soap or castile soap) when the fair market value thereof at the place of manufacture abroad is over twelve and one-half (12½) cents per pound wholesale, shall be rated for duty under tariff item 228 as soap, n.o.p."

New Revenue Duties

Under date May 1st, 1918, the Commissioner of Customs has instructed collectors of customs (Memo 2195 B) as follows:

You are advised that on and after May 1st, 1918, until otherwise ordered, customs duties are to be levied and collected on the undermentioned goods in accordance with the following resolutions introduced in Parliament, viz.:

RESOLUTIONS.

1. Resolved, That it is expedient to amend Schedule A to The Customs Tariff, 1907, as amended by Chapter 5 of the Acts of 1914, second section, and by Chapter 3 of the Acts of 1915, and to strike thereout the tariff items:

24, 25, 25a, 26, 27, 28, 28a, 29, 29a, 143, 144, 145, the several enumerations of goods respectively, and the several rates of duties of customs, if any, set opposite each of the said items, and to provide that the following items, enumerations and rates of duties be inserted in said Schedule A:

Tariff items	British Preferential tariff	Intermediate tariff	Gen'l. tariff
24 Chicory, raw or green.....(per lb.)	5c	7c	7c
25 Chicory, kiln-dried, roasted or ground (per lb.)	8c	10c	10c
25a Coffee, extract of, n.o.p., and substitutes thereof of all kinds.....(per lb.)	9c	12c	12c
26 Coffee, roasted or ground, and all imitations thereof and substitutes therefor, including acorn nuts, n.o.p.....(per lb.)	8c	10c	10c
27 Coffee, roasted or ground, when not imported direct from the country of growth and production	8c	10c	10c
28 Coffee, green, imported direct from the country of growth and production, and green coffee purchased on bond in the United Kingdom	7½ p.c.	10 p.c.	10 p.c.
	5c	7c	7c

Tariff items	British Pre- ferential tariff	Inter- mediate tariff	Gen'l. tariff
28a Tea imported direct from the country of growth and production, and tea purchased in bond in the United Kingdom (per lb.)	10c	10c	10c
When in wrappings, cartons or other packages weighing five pounds or less the weight of the wrappings, cartons or other packages to be included in the weight for duty.			
29 Coffee, green, n.o.p. (per lb.)	5c	7c	7c
	and 7½ p.c.	10 p.c.	10 p.c.
29a Tea, n.o.p. (per lb.)	10c	10c	10c
	and 10 p.c.	10 p.c.	10 p.c.
When in wrappings, cartons or other packages weighing five pounds or less the weight of the wrappings, cartons or other packages to be included in the weight for duty.			
143 Cigars and cigarettes, the weight of cigars to include bands and ribbons, and the weight of cigarettes to include the paper covering (per lb.)	\$4 10	\$4 10	\$1 10
	and 25 p.c.	25 p.c.	25 p.c.
144 Cut tobacco (per lb.)	95c	95c	95c
145 Manufactured tobacco, n.o.p., and snuff (per lb.)	90c	90c	90c
147a Beverages in the manufacture of which malt, rice or corn is used when containing not more than two and one-half per centum of proof spirit	25 p.c.	40 p.c.	40 p.c.
657a Cinematograph or moving picture films, positives, one and one-eighth of an inch in width and over, per linear foot	3½c	5c	5c

2. Resolved, That it is expedient to provide that the provisions of the foregoing resolutions shall be deemed to have come into operation on the first day of May, one thousand nine hundred and eighteen, and to apply and to have applied to all goods mentioned in the foregoing resolutions imported or taken out of warehouses for consumption on and after that day, and to have also applied to such goods previously imported for which no entry for consumption was made before that day.

FURTHER INSTRUCTIONS.

The undermentioned goods being subject to a War Excise Tax equal to ten per cent. of their duty paid value when imported or entered at customs on and after May 1, 1918, collectors of customs are instructed not to release the said goods without a receipt for the amount of the excise duty from the nearest collector of Inland Revenue—the said goods being as follows:

Automobiles,
Gramophones,
Graphophones,
Phonographs,
Talking Machines,

Cylinders and records therefor.
Mechanical Piano and Organ players.
and Records therefor.

Articles commonly or commercially known as jewellery, whether real or imitation, for adornment of the person.

JOHN McDUGALD, *Commissioner.*

New Revenue Duties

The resolutions introduced in the House of Commons dealing with excise and income taxation are as follows:

1. Resolved, That it is expedient to impose, levy and collect on tobacco and cigars manufactured in Canada the following duties or excise:

- (a) On all chewing and smoking tobacco, fine-cut, caven-dish, plug or twist, cut or granulated, of every description—on tobacco twisted by hand or reduced into a condition to be consumed or in any manner other than the ordinary mode of drying and curing, prepared for sale or consumption, even if prepared without the use of any machine or instrument, and without being pressed or sweetened—and on all

fine-cut shorts and refuse scraps, cuttings and sweepings of tobacco made from raw leaf tobacco or the product in any form, other than in this Act otherwise provided, of raw leaf tobacco, twenty cents per pound, actual weight;

- (b) On common Canada twist, when made solely from tobacco grown in Canada, and on the farm or premises where grown, by the cultivator duly licensed therefor, or in a licensed tobacco manufactory, twenty cents per pound, actual weight;

- (c) On all snuff made from raw leaf tobacco, or the product in any form of raw leaf tobacco or any substitute for tobacco, ground, dry, scented, or otherwise, of all descriptions, when prepared for use, twenty cents per pound, actual weight;

- (d) Snuff flour, when sold or removed for use or consumption, shall pay the same duty as snuff, and shall be put up in packages and stamped in the same manner as herein prescribed for snuff completely manufactured, except that snuff flour not prepared for use, but which needs to be subjected to further processes, by sifting, pickling, scenting, or otherwise, before it is in a condition fit for use or consumption, may be sold by one tobacco manufacturer directly to another tobacco manufacturer, and without payment of the duty, under such regulations as are provided in that behalf by the Department;

- (e) On cigars of all descriptions, made from raw leaf tobacco, or any substitute therefor, six dollars per thousand;

- (f) On all cigars, when put up in packages containing less than ten cigars each, seven dollars per thousand;

- (g) On cigarettes made from raw leaf tobacco, or any substitute therefor, weighing not more than three pounds per thousand, six dollars per thousand;

- (h) On cigarettes made from raw leaf tobacco, or any substitute therefor, weighing more than three pounds per thousand, eleven dollars per thousand;

- (i) On all foreign raw leaf tobacco, unstemmed, taken out of warehouse for manufacture in any cigar or tobacco manufactory, forty cents per pound, computed according to the standard of leaf tobacco as hereinbefore established;

- (j) On all foreign raw leaf tobacco, stemmed, taken out of warehouse for manufacture in any cigar or tobacco manufactory, sixty cents per pound, computed according to the standard of leaf tobacco as hereinbefore established;

- (2) In all tobacco manufactories where less than 50 per cent. of Canadian raw leaf tobacco is used, and where 10 per cent. or more, of other materials is used, such materials shall be subject to a duty of twenty-three cents per pound actual weight.

2. Resolved, That it is expedient to provide that no person shall grow tobacco in Canada in excess of the amount or for purposes other than those mentioned in section three hundred and twenty-five of the Inland Revenue Act without a license, that a fee of two dollars be paid for such license, and that a tax of five cents a pound be collected on all tobacco grown with the exception aforesaid.

3. Resolved, That any enactment found on the preceding resolutions shall be deemed to have come into force on the first day of May, nineteen hundred and eighteen.

Resolved, That it is expedient to amend The Special War Revenue Act, 1915, and to provide that the tax to be paid by purchasers of a berth in a sleeping car be increased to ten per cent. of the price for each berth, but in no case shall the tax be less than twenty-five cents for each berth; and that the tax for a seat in a Pullman or parlor car be increased to ten cents for each seat; that the definition of the word "consumer" be amended so as to include a person who buys the articles mentioned for any purpose; that medicinal preparations and compositions excepted at the end of section fourteen be limited to those sold under the name used for them in the publications mentioned in the said section or any preparation manufactured and sold exclusively for the medicinal profession and on the labels of which no claim is made that the preparation has medicinal or curative powers or any description as to the amount that constitutes a proper dose;

that manufacturers and importers of matches and playing cards be required after the thirtieth day of April, 1918, to affix to each package of matches and playing cards an adhesive stamp of the value of one cent for each one hundred matches or fractional part thereof in a package and of the value of eight cents on each package containing not more than fifty-four playing cards, and that such stamps be placed upon all packages of matches and playing cards held by dealers for sale on the first day of July, 1918, and that such stamps need not be affixed to packages of matches or playing cards manufactured for export; that there be levied a war excise tax equal to ten per cent. upon automobiles, gramophones, graphophones, phonographs, talking machines, cylinders and records therefor, mechanical piano and organ players and records therefor, articles commonly or commercially known as jewellery, whether real or imitation, for adornment of the person, when manufactured or imported after the thirtieth day of April, 1918, on the duty paid value when imported and on the price when manufactured and sold, provided that such war excise tax shall not be payable when the articles are manufactured for export or in the case of jewellery where the total amount of jewellery manufactured by any one person does not exceed the value of one thousand dollars in any calendar year; that a war excise tax be collected upon all automobiles and jewellery imported into Canada for sale or manufactured in Canada on or before the 30th day of April, 1918, and which on that day have not been sold to *bona fide* users, or ten per centum of the amount of the duty paid value when imported and of ten per centum of the price when they have been manufactured and sold in Canada, but that no war excise tax be collected upon the same when manufactured for export, in accordance with regulations; and that no war excise tax be collected on jewellery imported or manufactured and unsold on the thirtieth day of April, 1918, where the total duty paid value or price of the entire stock of the same held by any one person does not exceed one thousand dollars; and that there be levied a war excise tax of ten cents per pound upon all tea entered at customs on or before the thirtieth day of April, 1918, and held by importers or dealers and which on that day had not been sold, where the stock of such importers or dealers exceeds one thousand pounds.

Resolved, That it is expedient to amend The Business Profits War Tax Act, 1916, and to provide that Paragraph (c) of section three be repealed; that any business having a capital of not less than twenty-five thousand dollars and under fifty thousand dollars shall pay a tax of twenty-five per centum of the amount of the profits exceeding ten per cent. per annum upon the capital; that the amount paid or payable under the provisions of Part 1 of The Special War Revenue Act, 1915, and The Income War Tax Act, 1917, shall be deducted from the amount payable under the provisions of the above Act, and that in computing the profits of such no taxpayer shall include any tax paid under the said Acts in the expenses of his business; that the amount of capital in the excepted business mentioned in paragraph (a) of section five of The Business Profits War Tax Act, 1916, be reduced from fifty thousand dollars to twenty-five thousand dollars; that dividends paid during the accounting period shall be considered as a reduction of the unimpaired reserve, rest or accumulated profits; that the provisions of section three of the last mentioned Act be continued in force to the thirty-first day of December, 1918.

Resolved, That it is expedient to amend the Income War Tax Act, 1917, and provide that "dependent child" shall mean a child under twenty-one years of age and dependent on its parent for support on account of physical or mental capacity; that paragraph (b) of section three be repealed, and that an exemption of two hundred dollars be allowed for each dependent child under sixteen years of age; that paragraph (d) of section three be amended by striking out the words "or from the net earnings"; that subsection one and two of section four be repealed, and that it be provided that there shall be assessed, levied and paid upon the income during the preceding year of every person residing or ordinarily resident in Canada or carrying on any business in Canada and upon the income received by any person from any source within Canada the following taxes:

- (a) two per centum upon all income exceeding one thousand dollars but not exceeding fifteen hundred dollars in the case of unmarried persons or widows or widowers without dependent children, and exceeding two thousand dollars but not exceeding three thousand dollars in the case of all other persons; four per centum upon all income exceeding fifteen hun-

dred dollars in the case of unmarried persons and widows or widowers without dependent children, and exceeding three thousand dollars in the case of all other persons;

and in addition thereto,

- (b) two per centum upon the amount by which the income exceeds six thousand dollars and does not exceed ten thousand dollars; and
- (c) five per centum upon the amount by which the income exceeds ten thousand dollars and does not exceed twenty thousand dollars; and
- (d) eight per centum of the amount by which the income exceeds twenty thousand dollars and does not exceed thirty thousand dollars; and
- (e) ten per centum of the amount by which the income exceeds thirty thousand dollars and does not exceed fifty thousand dollars; and
- (f) fifteen per centum of the amount by which the income exceeds fifty thousand dollars and does not exceed seventy-five thousand dollars; and
- (g) twenty per centum of the amount by which the income exceeds seventy-five thousand dollars and does not exceed one hundred thousand dollars; and
- (h) twenty-five per centum of the amount by which the income exceeds one hundred thousand dollars and does not exceed two hundred thousand dollars; and
- (i) thirty per centum of the amount by which the income exceeds two hundred thousand dollars and does not exceed four hundred thousand dollars; and
- (j) thirty-five per centum of the amount by which the income exceeds four hundred thousand dollars and does not exceed six hundred thousand dollars; and
- (k) forty per centum of the amount by which the income exceeds six hundred thousand dollars and does not exceed eight hundred thousand dollars; and
- (l) forty-five per centum of the amount by which the income exceeds eight hundred thousand dollars and does not exceed one million dollars; and
- (m) fifty per centum of the amount by which the income exceeds one million dollars;

and in addition thereto the following surtax:

- (n) five per centum of the tax payable upon income in excess of six thousand but not exceeding ten thousand dollars;
- (o) ten per centum of the tax payable upon income in excess of ten thousand dollars but not exceeding one hundred thousand dollars;
- (p) fifteen per centum of the tax payable upon income exceeding one hundred thousand dollars but not exceeding two hundred thousand dollars;
- (q) thirty-five per centum of the tax payable upon income exceeding two hundred thousand dollars;

that corporations and joint stock companies no matter how created or organized shall pay six per centum upon income exceeding three thousand dollars, but shall not be liable to pay the supertax; that the Minister may permit any corporation or joint stock company the fiscal year of which is not the calendar year, to make a return and to have the tax payable by it computed upon its income for the twelve months ending with its last fiscal year preceding the date of assessment; that section 5 be amended by exempting the incomes or such portion of the incomes of judges and retired judges as comes within the provisions of subsection 3 of section 27 of the Judges Act and the incomes of incorporated companies whose business and assets are carried on and situate entirely outside Canada.

United States War Trade Board, Washington

List of Restricted Imports No. 2.

The following announcement is made by the War Trade Board:

No import licenses for shipments made after May 13, 1918, will be granted for articles on this list, except as specifically herein provided. These provisions authorize the importation of the specified articles only when the goods originate in one of the countries designated in the particular provision covering such article, and do not permit the im-

portation of goods originating in other countries, but coming through such designated countries.

Licenses for the following articles may be granted only for shipments coming from Canada:

- 101. Lime.
- 102. Talc and soapstone.

Licenses for the following articles may be granted only for shipments coming from Canada and Newfoundland:

- 103. Shellfish (does not include crabmeat from Japan).

Licenses for the following articles may be granted only for shipments coming from Canada and Mexico:

- 104. Molybdenum.

Licenses for the following articles may be granted only for shipments coming from Cuba and West Indies:

- 105. Tobacco leaf.

Licenses for the following articles may be granted only for shipments coming from Canada, Mexico, Newfoundland and Scandinavia:

- 106. Fish, fresh, cured, or preserved.

Licenses for the following articles will not be granted for shipments from European countries, but may be granted for shipments from all other countries:

- 107. Animal oils.

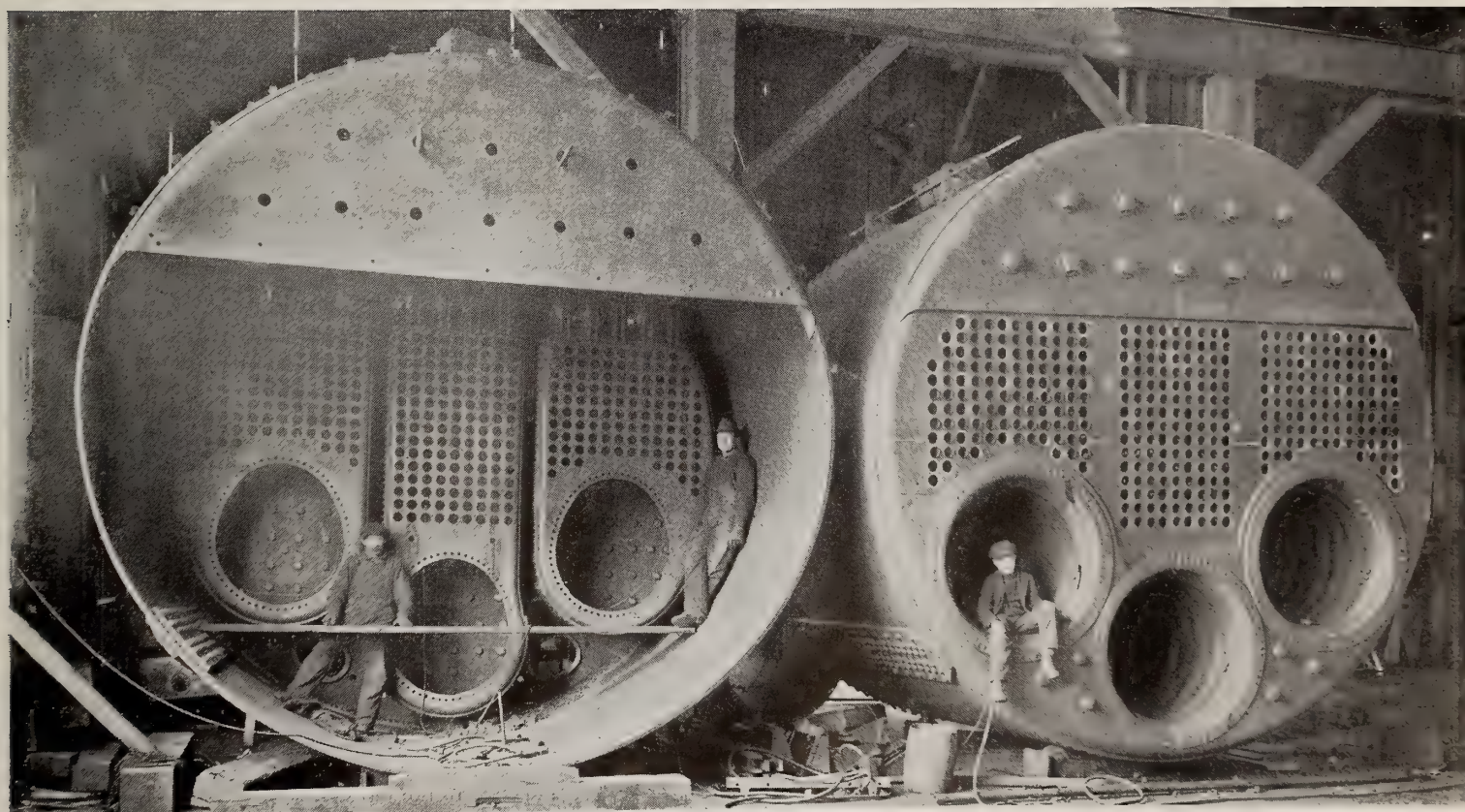
Licenses for the following articles will be granted only for shipments coming overland or by lake from Canada, or coming overland from Mexico:

- 108. Aloxite and boro-carbone.
- 109. Borax.
- 110. Cement for building purposes.
- 111. Chloride of lime.
- 112. Cyanide of soda.
- 113. Dairy products.
- 114. Ferromanganese and spiegeleisen.

- 115. Lead.
- 116. Magnesite.
- 117. Meat products and preserved meats.
- 118. Paraffin.
- 119. Pumice.
- 120. Starch.
- 121. Stone and manufactures thereof.

Licenses for the following articles will be granted only for shipments coming: (a) overland or by lake from Canada; (b) overland from Mexico; (c) as return cargo from European countries, and then only when shipped from a convenient port and when loaded without undue delay:

- 122. Argols or wine lees.
- 123. Bones, hoofs and horns, unmanufactured.
- 124. Baskets of wood, bamboo, straw, or compositions of wood.
- 125. Cork manufactured, and manufactures thereof.
- 126. Edible substances, not specifically provided for in the tariff schedules.
- 127. Eggs, dried, frozen, prepared or preserved and yolks of eggs.
- 128. Fans.
- 129. Fuller's earth.
- 130. Furniture.
- 131. Furs and manufactures thereof (does not include fur hats, fur not on the skin prepared for hatter's use, nor raw seal skins from Uruguay).
- 132. Glass and glassware (does not include lenses, opera and field glasses, optical instruments, spectacles, eyeglasses, goggles, surveying instruments, telescopes, microscopes and plates or discs for use in the manufacture of optical goods).
- 133. Glue and glue size.
- 134. Glue stock and raw hide cuttings.
- 135. Hair, human, and manufactures thereof.
- 136. Horsehair, artificial, and manufactures thereof.
- 137. Indigo, synthetic.
- 138. Ivory, animal and manufactures thereof.



Impressive Products of British Columbia Industry

Scotch Marine Boilers being built by the Vulcan Iron Works, Vancouver, for the 8,800-ton steel steamer "War Camp," recently launched from the ways of the Wallace Shipyards, North Vancouver. The boilers are 15 feet 6 inches in diameter by 11 feet 3 inches long

139. Licorice root.
 140. Moss and seaweed.
 141. Paper and manufactures thereof (does not include books and other printed matter).
 142. Paper stock, crude (does not include wood-pulp).
 143. Straw and grass, unmanufactured, and manufactures thereof.
 144. Tea waste, siftings or sweepings.
 145. Vanilla beans.

Licenses for the following articles may be granted from any country, but only for shipments coming as deck cargo or on vessels unfit for essential imports:

146. Quebracho wood.

All outstanding licenses to import the above articles from any country, from which, under the above announcement licenses for such article will not be granted, shall expire and become void unless ocean shipment thereunder is made on or before May 13, 1918.

Also, all outstanding licenses to import from European countries articles covered by above items numbered 122 to 145 inclusive, and all outstanding licenses for quebracho wood shall expire and become void unless ocean shipment thereunder is made on or before May 13, 1918. As to these, new applications may be made for shipments after May 13, 1918.

VANCE C. McCORMICK, *Chairman.*

FOREIGN TRADE OF CANADA

(Comparison 1916, 1917 and 1918.)

IMPORTATIONS.

	Month of March.			Twelve Months ending March.		
	1916.	1917.	1918.	1916.	1917.	1918.
Dutiable Goods	\$34,780,853	\$54,571,450	\$50,637,294	\$289,332,729	\$461,708,206	\$542,319,623
Free Goods	27,253,752	47,764,436	36,618,404	218,450,632	383,622,697	420,202,224
Total	\$62,034,605	\$102,335,886	\$87,255,698	\$507,783,361	\$845,330,903	\$962,521,847
Coin and Bullion	531,383	1,632,950	602,562	34,260,202	28,081,120	12,279,173
Grand Total	\$62,565,988	\$103,968,836	\$87,858,260	\$542,043,563	\$873,412,023	\$974,801,020
Duty Collected	\$12,171,978	\$17,072,384	\$15,799,244	\$103,929,426	\$147,623,230	\$161,588,465

EXPORTATIONS.

	Month of March.					
	—1916—		—1917—		—1918—	
	Domestic.	Foreign.	Domestic.	Foreign.	Domestic.	Foreign.
The Mine	\$8,004,843	\$54,838	\$9,980,711	\$11,850	\$6,772,173	\$877,653
The Fisheries	2,054,493	23,255	2,373,258	94,653	3,365,222	92,082
The Forest	3,247,691	1,466	3,614,385	1,217	3,922,820	1,276
Animals and their Produce	8,626,681	309,025	14,809,941	1,584,969	9,552,749	218,422
Agricultural Products	17,852,426	39,185	21,962,252	1,011,089	37,895,628	471,741
Manufactures	47,013,766	595,149	69,239,486	1,145,602	37,999,663	2,078,298
Miscellaneous	1,614,338	142,992	435,280	260,318	346,732	124,517
Total Merchandise	\$88,414,238	\$1,165,910	\$122,415,313	\$4,109,698	\$99,854,987	\$3,863,989
Coin and Bullion		192,274	107	228,820	3,138	156,958
Grand Total Exports	\$88,414,238	\$1,358,184	\$122,415,420	\$4,338,518	\$99,858,125	\$4,020,947

EXPORTATIONS.

(Twelve Months Ending March.)

	—1916—		—1917—		—1918—	
	Domestic.	Foreign.	Domestic.	Foreign.	Domestic.	Foreign.
The Mine	\$66,589,861	\$7,329,537	\$85,616,907	\$219,514	\$73,760,502	\$1,928,373
The Fisheries	22,377,977	213,307	24,889,253	429,502	32,602,151	619,024
The Forest	51,271,400	426,884	55,907,209	488,091	51,899,704	60,645
Animals and their Produce	102,882,276	2,936,914	127,795,468	7,517,342	172,743,081	7,125,087
Agricultural Products	249,661,194	17,213,996	373,413,701	7,451,069	567,713,584	10,036,766
Manufactures	242,034,998	8,017,225	477,399,676	9,913,090	636,602,516	24,237,914
Miscellaneous	6,792,932	1,551,569	6,353,554	1,816,724	4,706,250	2,134,195
Total Merchandise	\$741,610,638	\$37,689,432	\$1,151,375,768	\$27,835,332	\$1,540,027,788	\$46,142,004
Coin and Bullion	315	103,572,117	86,087	196,460,961	290,281	3,201,122
Grand Total Exports	\$741,610,953	\$141,261,549	\$1,151,461,855	\$224,296,293	\$1,540,318,069	\$49,343,126

Uncle Sam's Foreign Trade Organizations

A Directory of the Boards, Bureaus and Commissions Concerned with the War-Time Control or the Promotion and Development of Export and Import Trade,
Which Will be Found of Value to Canadian Manufacturers

(Reprinted from "The World's Markets")

ONE of the natural consequences of the entry of the United States into the world-war has been the gradual reorganization of the machinery of the Federal Administration in order to cope with the vast tasks now confronting the nation. Many of the problems presented were not only utterly without precedent, but were at the same time of appalling magnitude and of pressing urgency. It thus became necessary to divide and sub-divide the Boards or Bureaus originally entrusted with the handling of these matters. To the outside public the result has at times seemed confusing, but to those sufficiently close to the work to perceive its many difficulties and complexities it has been evident that in no other way could steady progress be assured.

A great many of these changes have been of vital interest to those engaged in the export and import trade of the United States, and this article has been prepared with a view to assisting this portion of the business community to keep accurately informed regarding these important developments in so far as they relate to exports and imports. Owing to the frequent changes in the names, functions, personnel and location of many of the bureaus having to do with this portion of the nation's commerce it has at times been difficult for those engaged in foreign trade to ascertain just where to apply for certain necessary permits or information. It is, therefore, hoped that the following brief summaries of the principal boards, bureaus and other organizations concerned in war-time control of exports and imports, or in the promotion and development of foreign trade, may prove to be of practical value. Every effort has been made to make it as accurate and complete as possible, but the extension of the nation's activities along these lines has been so rapid, and so diversified in its ramifications, that some unintentional omissions are almost unavoidable:

DEPARTMENT OF STATE

Office of the Foreign Trade Adviser.

State Department Annex, 1653 Pennsylvania Avenue, Washington, D.C.

The principal function of this office is the reviewing and editing of consular reports on trade subjects, the conducting of the Department's commercial correspondence, and the gathering and formulating of advice regarding commercial subjects for the use of the secretary and other officers of the Department. On Monday, March 4, Mr. Marion Letcher, Foreign Trade Adviser for the Department of State, addressed the American Manufacturers' Export Association on the ways in which the State Department can assist in the development of our foreign trade. An abstract of this valuable address will be published in the April issue of *The World's Markets*.

DEPARTMENT OF COMMERCE.

Bureau of Foreign and Domestic Commerce.

19th Street and Pennsylvania Avenue, Washington, D.C.
Chief, Burwell S. Cutler.

This Bureau, more than any other branch of the Federal Government, is in normal times entrusted with the work of collecting and distributing commercial information regarding foreign countries for the benefit of American business men. Its information is collected chiefly by members of the American Consular Service, under the direction of the Department of State, and by Special Agents of the Department of Commerce. It is distributed principally by means of daily *Commerce Reports*, and various special reports—many of which are of the greatest value to the mercantile community. The Bureau also maintains branch offices where information can be obtained, and where files of its more important publications

are kept for ready reference. The officers and special agents of the Bureau also endeavor to address chambers of commerce and other business organizations whenever practicable; samples of many kinds are collected and placed on display, and in a great variety of practical ways the Bureau aids and encourages the extension of American commerce abroad.

The Bureau maintains the following district branch offices:

New York—Custom House, Room 734.
Boston—Custom House, Room 1801.
Chicago—Federal Building, Room 504.
St. Louis—402 Third National Bank Building.
New Orleans—1020 Hibernia Bank Building.
San Francisco—Custom House, Room 307.
Seattle—848 Henry Building.

The following are co-operative branch offices of the Bureau:

Cleveland, Ohio—Chamber of Commerce.
Cincinnati, Ohio—Chamber of Commerce and General Freight Agent, Southern Railway, 96 Ingalls Building.
Los Angeles, Cal.—Chamber of Commerce.
Philadelphia, Pa.—Chamber of Commerce.
Chattanooga, Tenn.—South American Agent, Southern Railway System.
Portland, Ore.—Chamber of Commerce.
Dayton, Ohio—Greater Dayton Association.

War Trade Board,

1435 K Street, N.W., Washington, D.C.

This board was established October 12, 1917, by an executive order of the President, for the administration of certain provisions of the "Espionage Act" and of the "Trading with the Enemy Act." Originally charged only with the supervision and control of certain exports and imports its functions were, by an executive order signed February 14, 1918, and effective February 16, extended to cover all exports and imports whatsoever. The board conducts its work through nine Bureaus and a newly organized Contraband Committee, which carry out the policies it formulates. This board, by virtue of its creation by the President, is responsible only to him and is not a branch or subdivision of any department. It consists, at present, of the following members:

Vance C. McCormick, Representative of the Secretary of State.
Albert Strauss, Representative of the Secretary of the Treasury.
Alonzo E. Taylor, Representative of the Secretary of Agriculture.
Clarence M. Woolley, Representative of the Secretary of Commerce.
Beavor White, Representative of the Food Administrator.
Frank C. Munson and Edwin F. Gay, Representatives of the United States Shipping Board.
Thomas L. Chadbourne, Counsellor and Representative of the Secretary of State.
Lawrence Bennett, Secretary.
Herbert N. Straus, Controller.

The bureaus of the War Trade Board, with their respective addresses, directors and functions, are as follows:

Bureau of Exports.

1435 K Street, N.W., Washington, D.C.
Director, H. B. Van Sinderen.

The function of this Bureau is the proper consideration and disposition of applications for licenses to export commodities from the United States—this control, since February 16, 1918, having been extended to cover all exports of any kind whatsoever. The policies controlling the issuance or refusal of export licenses are formulated by the War Trade Board, and are administered by the Bureau of Exports, which devises rules and regulations for such administration.

In addition to the director and his assistants and a large office staff, this Bureau comprises a number of trade experts and trade distributors. The former have to do with the following commodities: (1) leather, (2) agricultural machinery, arms and ammunition, (3) foods, (4) coal, fuel, oils and jewelry, (5) electrical apparatus and abrasives, (6) chemicals, (7) commodities containing wool, (8) steel and tin, (9) cotton, (10) jute, wool, hemp, sisal, flax, and linen, (11) clay

and clay products, (12) mining machinery and metals other than steel, (13) machinery, and (14) lumber. The five trade distributors are in charge of work relating to the following countries: (1) Spain, (2) Switzerland and Greece, (3) West Indies, (4) Norway, Sweden, Denmark and Holland, and (5) Cuba.

There are sixteen branch offices of the Bureau of Exports in various cities throughout the country. The locations of these, together with the names of the special agents in charge, follow:

New York—45 Broadway, Special Agent, William E. Peck.
 Boston, Mass.—1806 Custom House, Special Agent, Roland M. Baker.
 Chicago, Ill.—1106 Monadnock Building, Special Agent, Elmer R. Murphey.
 New Orleans, La.—Canal Bank Building, Special Agent, Joseph P. Henican.
 San Francisco, Cal.—212 Custom House, Special Agent, C. O. G. Miller.
 Seattle, Wash.—825-826 Henry Building, Special Agent, J. MacPhee Ferguson.
 St. Louis, Mo.—1305 Federal Reserve Bank Building, Special Agent, John H. Overall.
 Galveston, Tex.—Federal Building, Special Agent, Frank A. Allen.
 Savannah, Ga.—Savannah Bank & Trust Company Building, Special Agent, J. W. Motte.
 Mobile, Ala.—Custom House, Special Agent, M. Waring Harrison.
 Los Angeles, Cal.—International Bank Building, Special Agent, William Dunkerley.
 Portland, Ore.—748 Morgan Building, Special Agent, Henry L. Corbett.
 Philadelphia, Pa.—305 Lafayette Building, Special Agent, Edward C. Dixon.
 Nogales, Ariz.—Bowman Hotel Building, Special Agent, William T. Haley.
 El Paso, Tex.—Federal Building, Special Agent, John A. Wright.
 Eagle Pass, Tex.—First National Bank Building, Special Agent, F. L. Jordan.

The Contraband Committee

1435 K Street, N.W., Washington, D.C.
 Chairman, C. A. Richards.

This committee issues, withholds and refuses export licenses in conformity with the policy of the War Trade Board. It is a new organization, having assumed its duties on February 12, 1918. It was created for the purpose of facilitating and expediting the issuance or refusal of licenses, and the ready solution of the many problems which arise daily in connection therewith. This committee is virtually a part of the Bureau of Exports, since both have to do with the same subject. The distinction between the two bodies is that the committee decides on the action to be taken in difficult cases and the Bureau carries its decisions into effect. As one official expressed it, "The Committee is the head, the Bureau is the arm of the War Trade Board in the matter of export licenses."

Bureau of Imports

Bond Building, Washington, D.C.
 Director, Fred B. Peterson.

The work of the Bureau of Imports comprises the granting or refusing of licenses to import all commodities into the United States; also, in connection with this, the devising of ways and means for obtaining increased supplies of raw materials from other countries, and the conservation of supplies of certain raw materials by development of the use of substitutes. This Bureau is aided in its work by several trade organizations which have consented, at its request, to act as consignees for the importation of certain specified commodities. A partial list of these organizations, with their respective functions relative to imports, will be found on page 12.

Bureau of Transportation

1435 K Street, N.W., Washington, D.C.
 Director, L. L. Richards.

The work of this Bureau is the administration of the rules of the War Trade Board regarding the movement of all vessels to and from American ports. It grants licenses to all vessels for coal or oil for propelling power and licenses for port, sea and ship's stores and supplies. No vessel is permitted to clear from an American port without securing from this Bureau a license for bunker fuel and ship's stores. The Assistant Director of the Bureau, Marc M. Michael, is in charge of its New York branch office at 45 Broadway.

Bureau of Enemy Trade

Bond Building, Washington, D.C.
 Director, John Henry Hammond.

The Bureau of Enemy Trade issues licenses permitting transactions involving trading with, or on behalf of, an enemy or ally of enemy or person acting on behalf of or for the

benefit of an enemy or ally of enemy, so far as such transactions are within the jurisdiction of the War Trade Board. It also administers the control, by license, of the continued conduct of business in the United States by enemy concerns. Where an export license is required for an article, and an enemy or ally of enemy is in any way involved in the exportation, a "Trading with the Enemy" license is necessary in addition to the export license. Applications for licenses to apply for patents in enemy countries and to use enemy-owned patents in this country should be made out to the Federal Trade Commission. Reports of property held for, and of money owed to, enemies or allies of enemy should be made to the Alien Property Custodian.

Bureau of War Trade Intelligence

Bond Building, Washington, D.C.
 Director, Paul Fuller, Jr.

The Bureau of War Trade Intelligence deals generally with all matters of war-trade information, and specifically with the character of consignors and consignees. All correspondence or information of any kind bearing on consignors or consignees should be addressed to this Bureau, which, among its other duties, prepares and revises the Enemy Trading List.

In addition to two examiners of licenses for export and import trading in the United States, there are six examiners whose activities are directed toward foreign countries, as follows: (1) Spain, Portugal and the Dutch East Indies; (2) Argentina, Chile, Paraguay, Bolivia, Uruguay and Peru; (3) Costa Rica, Colombia, Denmark, Holland, Norway, Russia, Greece, Switzerland, Sweden, Siam, etc.; (4) Brazil, Dominican Republic, Ecuador, Guatemala, Guiana, Haiti, Honduras, Nicaragua, Panama, Porto Rico, Salvador, Venezuela and West Indies; (5) Mexico; and (6) China and Japan.

Bureau of Research

1027 Vermont Avenue, N.W., Washington, D.C.
 Director, Walter M. Adriance.

This Bureau is concerned with statistical problems in the control of foreign trade and the available resources of the country. The Bureau's function is to study various phases of the export and import trade of the United States and foreign countries, and to secure and render available for the Board and its several Bureaus information concerning the supply, production, consumption and trade movements of commodities.

Bureau of Tabulation and Statistics

920 F Street, N.W., Washington, D.C.
 Director, Lowell J. Reed.

This Bureau tabulates the licenses granted and refused by the War Trade Board. It compiles statistics from this material, indicating the quantities and values of various commodities, etc., that have been licensed for exportation from and importation into the United States, to and from the different countries of the world.

Bureau of Foreign Agents and Reports

1435 K Street, N.W., Washington, D.C.
 Director, Charles Denby.

This Bureau instructs and supervises the activities of special agents in foreign countries and transmits their reports and the information they compile to the War Trade Board.

Bureau of Administration

Bond Building, Washington, D.C.
 Director, Harry A. Engman, Jr.

This Bureau has charge of the routine of the office needs of the War Trade Board and its bureaus.

Division of Information

1435 K Street, N.W., Washington, D.C.
 Chief, Louis E. Van Norman.

The Division of Information collects, compiles and distributes information for the use of the War Trade Board, and is the medium through which are issued to the press and the public the authorized statements of the board, including the *Journal of the War Trade Board*, the rules and regulations, etc. Every business house interested directly or indirectly in export or import licenses should be placed on the mailing list of the War Trade Board to receive these publications.

UNITED STATES SHIPPING BOARD

1319 F Street, N.W., Washington, D.C.
Chairman, Edward N. Hurley.

Through one of its subdivisions, the Emergency Fleet Corporation, the activities of the Shipping Board have a large indirect influence upon the foreign trade, not only of the United States but of the entire world—since the continued maintenance of international commerce depends largely upon the success with which its vast shipbuilding programme is carried out. The branch of the Shipping Board, however, that has most to do with foreign trade directly, is that concerned with the more efficient distribution and operation of existing ships. In this field of activity the present Shipping Board has made notable progress toward a more perfect coordination of the shipping resources of the United States and its Allies and their more efficient distribution and utilization. The various subdivisions of the Shipping Board concerned with the control and supervision of shipping are the following:

Division of Operations.

1319 F Street, N.W., Washington, D.C.
Director, Edward F. Carey.

Briefly stated, the function of this branch of the Shipping Board is to secure the fullest possible utilization of the supply of existing ships. Its powers are very great and the diversity of its activities such that no adequate summary of them is possible in the brief space here available. The important Shipping Control Committee described below is one recent result of its endeavors, while the Dispatch Agent and Chartering Committee are subsidiary branches of its organization.

Shipping Control Committee.

1319 F Street, N.W., Washington, D.C.
Chairman, P. A. S. Franklin.

This Committee was created January 30, 1918, and has absolute control over all vessels in American waters, although its primary purpose is to load and unload ships as fast as possible, and direct tonnage to ports where it is most needed, or where there is berth space to accommodate it. In addition to Mr. Franklin, who is at Washington, the Committee consists of H. H. Raymond, Shipping Controller at the port of New York, and Sir Connop Guthrie, representing the Allied Chartering Executive in the United States. The Committee has an office at 45 Broadway, New York. At present the principal tasks of this important Committee are connected directly with shipping for the United States and Allied Governments. Later it may seek to exercise more control over vessels carrying commercial freight.

Dispatch Agent.

11 Broadway, Room 707, New York.
Telephone, Bowling Green, 8810.
Special Dispatch Agent, Robert M. King.

This branch of the Shipping Board was created to expedite in every possible manner the movement of steamers at Atlantic ports. Vessel owners and agents are instructed to report at once delays to all steamers under their control caused by lack of coal, water, fuel, oil, crews, or any other reasons, to the nearest dispatch officer.

It then becomes the duty of such officers to see that the cause of delay is at once removed, and they have been given large powers to that end. In a sense, this is a trouble bureau, for any vessel that is being delayed for any reason has a right to call upon it for assistance. Through the activities of the New York office alone, 137 days were saved during the month of January, and 141 in February. In addition to the New York office, the following dispatch agents have thus far been appointed:

- W. K. Irving, 804 Marshall Building, Boston; also in charge of Portland, Me.; Providence, R.I., and New London, Conn. Telephone, Main 1046.
- L. T. Nelson, 320 Seaboard Bank Building, Norfolk, Va.; also in charge of Hampton Roads and Newport News, Va. Telephone, Norfolk 7400.
- W. W. Tingle, Light and German Streets, Baltimore, Md. Telephone, St. Paul 4916.

Chartering Committee.

409 Custom House, New York.
Chairman, Welding Ring.

This important Committee supervises and controls the fixing of all charters for American and neutral steamers from the port of New York to any part of the world. Through its activities charter rates have been steadied, and on certain routes materially reduced, while the Shipping Board has thereby been given absolute control over the movement of this vast quantity of tonnage.

POST OFFICE DEPARTMENT.**Division of Foreign Mails.**

Post Office Building, Washington, D.C.
In charge of Otto Praeger, Second Assistant Postmaster-General.

This division has jurisdiction over all matters connected with the exchange of mails, letters, parcel post, etc., with foreign countries. The postmasters at New York and other large cities issue periods, notices regarding changes in foreign postal regulations, arrivals or departures of foreign mails, etc.

TREASURY DEPARTMENT.**Division of Customs.**

Treasury Building, Washington, D.C.

This division has charge of all matters pertaining to customs treatment of importations from foreign countries, whether by mail, freight or express. The collectors of the various ports, appraisers and other officials connected with the administration of the custom houses are connected with this division.

FEDERAL RESERVE BOARD.**Division of Foreign Exchange.**

Treasury Building, Washington, D.C., and 16 Wall Street, Room 608, New York City.
Director, F. I. Kent.

This Division is operating under the Trading with the Enemy Act and the Espionage Act, by authority delegated by the President, to regulate all foreign exchange transactions.

Gold Export Committee.

Treasury Building, Washington, D.C.
Chairman, W. P. G. Harding, Governor of the Federal Reserve Board.

This Committee is acting with authority delegated by the President, under the two Acts of Congress just mentioned, to take such steps as may at any time become necessary to conserve the gold stock of the United States. No gold can at present be exported to any part of the world without the consent of this Committee.

UNITED STATES FOOD ADMINISTRATION.

18th and D Streets, Washington, D.C.
Administrator, Herbert C. Hoover.

This organization is consulted in connection with all exports of foodstuffs of any description to any part of the world. Its policies and decisions, however, are given effect through the War Trade Board, on which it is represented. Applications for licenses to export foodstuffs and all correspondence relative thereto must, therefore, be addressed to that Board and not to the Food Administration.

UNITED STATES FUEL ADMINISTRATION.

16th and I Streets, Washington, D.C.
Administrator, Harry A. Garfield.

The War Trade Board and the Shipping Board act as the representatives of the Fuel Administrator to control all exports of coal and fuel oil, and the supplying of bunker coal or fuel oil to steamers.

RAILROAD ADMINISTRATION.

Interstate Commerce Building, Washington, D.C.
Director General of Railroads, William G. McAdoo.

Established for the purpose of operating the railroads of the United States in the most efficient manner possible for the prosecution of the war, this Administration has large powers over the movement of export freight from the interior to the seaboard. The regional directors are as follows:

- Eastern Territory—A. H. Smith, Grand Central Terminal, New York.
- Southern Territory—C. H. Markham, Atlanta, Ga.
- Western Territory—R. H. Aishton, Chicago, Ill.

UNITED STATES TARIFF COMMISSION.

1322 New York Avenue, N.W., Washington, D.C.
Chairman, F. W. Taussig.

This Commission is engaged in various researches which may have a far-reaching influence on the future tariff policy of the United States. It has no administrative, legislative or judicial powers or duties, but is solely a body for investigation. It is required to report to the President, the Ways and Means Committee of the House of Representatives, and the Committee on Finance of the Senate whenever requested to do so. Among the more notable subjects now being investigated by this Commission are the codifica-

tion and simplification of administrative laws relating to customs; the foreign trade relations of the United States and the tariff policies of other nations, with special regard to readjustments likely to be necessary after the war; current developments regarding such articles as sugar and wool; an inquiry concerning free ports, their establishment in foreign countries, and their possibilities in the United States and its dependencies.

ALIEN PROPERTY CUSTODIAN.

16th and P Streets, N.W., Washington, D.C.
Custodian, A. Mitchell Palmer.

This organization was created by the President in an executive order under authority of the Trading with the Enemy Act for the purpose of taking charge of all property belonging to, or all moneys at any time due or payable to any enemy or ally of enemy. Under the terms and provisions of that Act it is required that all money or other properties owing to or belonging to, or held for or on account of, any enemy or ally of an enemy not holding a license granted under the provisions of said Act must be conveyed to the Alien Property Custodian at such time and in such manner as he may prescribe. The Custodian is required by the Trading with the Enemy Act to deposit all moneys coming into his hands in the Treasury of the United States, to be invested by the Secretary of the Treasury in United States bonds or certificates of indebtedness. With respect to all other property, the Custodian has all the powers of a common-law trustee. All moneys or properties are to be conserved during the war, and after the end of the war shall be disposed of as Congress shall direct.

There is a branch office of this organization at 11 Broadway, New York, in charge of Joseph A. Bower, manager, general business department. There is also a Bureau of Investigation located at 45 Broadway.

WAR INDUSTRIES BOARD

of the Council of National Defence.

The Council of National Defence was organized under the chairmanship of the Secretary of War to co-ordinate the business interests of the country with the work of the various departments at Washington, engaged in work relative to the war. For the most part, the work of the Council was accomplished by means of sub-committees and boards, consisting of the leaders in the various industries and activities represented who acted in an advisory capacity with reference to such matters as might be laid before them. For the most part these related to the purchase or conservation of supplies. The only branch of the organization having much to do with foreign trade is the Priorities Division. Many of the boards and committees have already accomplished their work, and have virtually ceased to be active.

Priorities Committee.

Washington, D.C.
R. S. Lovett, Priorities Commissioner.
Edwin B. Parker, Chairman of Committee.

The purpose of this Committee is to speed up the production of whatever may be essential, directly or indirectly, to the winning of the war—"the selective mobilization of the products of the soil, the mines and the factories for direct and indirect war needs." The principles governing the Committee in its orders and decisions have been clearly explained in a paper recently prepared by Judge Parker for *The Nation's Business*, and republished by the Committee in pamphlet form. The present rules and regulations governing priorities are given in Circular No. 3, issued by the Committee, January 1, 1918, which supersedes all previous rules and directions on the subject. The Priorities Committee includes co-ordinating members representing the United States army and navy, the Shipping Board, the Allied Purchasing Commission, the Food and Fuel Administrations, the War Trade Board, and the Finished Products Division of the War Industries Board.

TRADE ORGANIZATIONS.

associated with the War Trade Board.

For the purpose of giving the Bureau of Imports of the War Trade Board expert advice and assistance, and keeping it in close touch with the needs of the trades represented, certain trade organizations have been delegated authority to pass upon applications for import licenses. In each instance, the powers thus delegated are derived from the War Trade Board, and all rules and regulations issued by these bodies are subject to its approval.

Textile Alliance, Inc.

45 East 17th Street, New York.

This organization has been requested by the War Trade Board to act as consignee of importations of the following commodities from foreign countries:

Wool and Animal Hair, and the tops, noils, yarn and waste of same, and Woollen Rags and Crepe Fiber.
Skins, sheep-wooled or haired.
Skins, goat-haired.
Skins, kid-haired.
Jute and Burlap, or Burlap Bags.
Cotton and Flannelette Raisings.
Flax and Linen.
Mica.
Palm Oil and Palm Kernel Oil.

The purpose of this arrangement, which was also requested by many importers and subsequent purchasers who desired to avoid interruptions to their business, is to facilitate the importation and proper distribution of these commodities without any importer having undue advantages over his competitors. The Textile Alliance, Inc., also keeps posted as to the conditions in the wool, skins, jute, cotton, flax, mica and palm oil trades so as to be able to furnish its members and the War Trade Board with any information that may be required on such matters. The rules and regulations prescribed by the Alliance for importations in the above lines are contained in Bulletin No. 21, which also shows the forms required in connection with such importations. The Textile Alliance, Inc., has offices outside of New York, as follows:

Boston, 4 Liberty Square; New Orleans, Metropolitan Bank Building; San Francisco, Merchants' Exchange.
It also has representatives at London, Cape Town, Bombay, Melbourne, Wellington, N.Z., and Lagos, Nigeria.

The Tanners' Council of the United States of America, Inc.

738 Twelfth Street, Washington, D.C.

This organization has been requested by the War Trade Board to act as consignee of importations of the following commodities from foreign countries:

All leather raw stock (hides and skins, including all pickled hides and skins and all India tanned or rough tanned hides and skins, not finished leather).
All materials for tanning or dressing leather and all substances from which tanning materials can be extracted.
All imported finished leathers.

The purpose of this arrangement is the same as that made with the Textile Alliance, Inc., and the Tanners' Council likewise undertakes to keep informed regarding conditions in the tanning and leather trades for the benefit of its members and the War Trade Board. The rules and regulations prescribed by the Council for the importation of the above mentioned commodities are published in Bulletin No. 1, prepared with the approval of the War Trade Board. In addition to an office at 45 East 17th Street, New York, the Tanners' Council has the following branches:

Boston, 10 High Street; Philadelphia, 597 Drexel Building; Chicago, 212 West Washington Street; New Orleans, Metropolitan Bank Building; San Antonio Central Office Building; San Francisco, Merchants' Exchange; Seattle, L. C. Smith Building.

American Iron and Steel Institute.

61 Broadway, Room 2901, New York.

This organization has been requested by the War Trade Board to act as consignee of importations of tin from foreign countries, and also of various ferro-alloys, kindred ores and metals. For the purpose of facilitating this work, the Institute has appointed two sub-committees. The sub-committee on tin, of which John Hughes is chairman, acts as consignee of importations of pig tin, chloride of tin and tin ore. Complete rules and regulations covering such importations are contained in Bulletin No. 1, issued by the Iron and Steel Institute, November 22, 1917. The sub-committee on ferro-alloys, of which J. A. Farrell is chairman, acts as consignee of importations of ferro-manganese, spiegeleisen and all ferro-alloys, chrome, cobalt, manganese, molybdenum, titanium, tungsten, vanadium and their respective ores, scheelite, wolframite or any chemicals extracted therefrom. Rules and regulations covering such importation are contained in Bulletin No. 2 of the American Iron and Steel Institute, issued January 26, 1918.

The Rubber Association of America, Inc.

17 Battery Place, New York.

This Association, at the request of the War Trade Board, acts as consignee for all importations of crude rubber (including gutta joolatong), gutta percha, balata, gutta siak,

scrap and reclaimed rubber from foreign countries. This important service is handled by the Committee on Rubber and Kindred Products, of which Mr. Charles T. Wilson is chairman. Rules and regulations covering the importation of these products are given in Bulletin No. 1, issued December 7, 1917.

American Diamond Committee, Inc.
15 Maiden Lane, New York.

At the request of the War Trade Board, and also of importers, cutters, dealers and consumers who desire to avoid interruptions to their business, this Committee has undertaken to act as consignee of all importations of diamonds from foreign countries. Bulletin No. 1, issued December 31, 1917, gives the rules and regulations under which such importations can now be made. The Committee has also undertaken to act as consignee for all importations of crude and refined platinum, platinum iridium alloys in the form of ingot, sheet or wire; platinum sponge, gauze, chloride and scrap of all kinds; platinum in finished or manufactured form; also iridium, osmiridium, ismium, palladium, rhodium and ruthenium. The rules and regulations governing the importation of these products, are contained in Bulletin No. 2, issued January 10, 1918.

United States Shellac Importers' Association, Inc.
175 Pearl Street, New York.

This Association controls importations of shellac, button lac, garnet lac, seed lac, stick lac, keerie or refuse lac. Rules and regulations covering such importations are contained in Bulletin No. 1, approved by the War Trade Board January 22, 1918. Authorized representatives for receiving guarantees and endorsing bills of lading are: Davis & Nield, 103 Park Avenue, New York; Ruckstell & Land, Claus Spreckels Building, San Francisco, Cal.; Smith, Robertson & Moorhouse, 533 Henry Building, Seattle, Wash.

The Plumbago-Graphite Association, Inc.
17 State Street, New York.

This Association controls all importations of plumbago and graphite. Rules and regulations covering such importations are contained in Bulletin No. 1, approved by the War Trade Board December 28, 1917.

American Castor Bean and Oil Association, Inc.
120 Broadway, New York.

This Association controls importations of castor beans and castor oil. A bulletin containing regulations will be issued shortly.

It is probable that a Minimum Wage Bill for women, along very similar lines to that recently adopted in Manitoba, will be placed on the statute books of British Columbia at the present session of the legislature in that province.

Flour Mill for Sidney

New Company Formed to Establish Plant with 150-Barrel Capacity at this Atlantic Seaport

The Rhodes-Curry property in Sydney has been acquired by the Sydney Milling Company, a new \$50,000 corporation, which will start operating a flour mill by about July 1. Included in the plans of the company is the erection of a 50,000-bushel elevator. The flour mill will have a capacity of 150 barrels daily when complete, but there will also be equipment to produce 300 barrels of cornmeal; 40 to 50 tons of feed, and machinery for making crimped and flaked oats, oatmeal and other cereals. At the head of the company is J. W. Smith, of Pictou, who established the first roller flour mill in Nova Scotia in 1900, and has since built up the Atlantic Milling Co. at Pictou. The sales manager is A. J. Morrison.

Improved Facilities

Extension to Pier at Vancouver Makes It One of the Most Complete and Up-to-Date in Canada

During the past winter, the Canadian Pacific Railway Company completed a 600-foot extension to its "D" pier at Vancouver, B.C., making it one of the most complete and up-to-date constructions of its kind in Canada.

The total length is 1,000 feet and width 160 feet. The in-shore end for a distance of about 300 feet is two stories in height, the top one being for office accommodation, waiting-room, and customs examining rooms. The lower floor is designed for freight handling only, and among the equipment for handling freight, are five electrically driven freight elevators of 15 tons capacity each, and two adjustable slips worked by hand power. There are two standard gauge tracks on the freight deck, one a depressed track through the centre of the pier fitted with an electrically operated car haul, and the other a deck level track running outside the shed.

The extra accommodation provided by the extension has enabled the company to use one side of the pier for ocean-going ships, while the other is used for vessels belonging to the coast service.



The Canadian Pacific Railway Co.'s New Pier "D" at Vancouver, B.C.

Fire Insurance Rates Are Increased

Drastic Revisions Affecting Many Classes of Risk in Ontario and Quebec Have Been Made, the Increases Being Produced by Means of an Addition to the Occupancy Charges, while in a Number of Towns and Cities Key Rates Have Been Advanced

THE Canadian Fire Underwriters' Association, which practically control insurance rates in the provinces of Ontario and Quebec, have announced their decision to increase rates on many classes of manufacturing risks. The following are the principal classes affected:

Wood-working risks, including bent goods; agricultural implement works, wheel and hub works, wagon factories, last factories, cooperages, piano factories, organ factories, carriage factories, casket factories, handle factories, spool and bobbin factories, woodenware; children's sleigh, wagon and wood toy factories; planing mills; box, blind, sash and door factories; tub and pail works, splint basket factories, veneer mills, woollen mills, canning factories, flour, oatmeal and cereal mills; munition works, rolling mills and pipe mills, roofing felt factories, pulp and paper mills, leather board mills, foundries (of other than first-class construction).

The increases are made by means of an addition to the occupancy charges. The occupancy charge on wood-working risks of every description, and also on painting and finishing shops is increased by 50 cents.

In woollen mills the occupancy charge for carding is increased from 50c. to \$1.00, and the occupancy of the picker building from 1.25% to 1.50%. The charge for a picker in the mill is advanced from 1% to 1.50%, and for a picker in a metal-lined room in the mill from 50c. to \$1.00.

The canning factory occupancy charge is increased from 25c. to 40c. The occupancy charge for flour and cereal mills is increased by 50c. The basis charge for rolling mills and pipe mills is increased from 75c. to 1%, and that for munition works (which was increased from 75c. to 1% a few months ago) is again increased from 1% to 1.25%. Munition plants are also principal sufferers under the extra charges for overtime mentioned below.

Increased Key Rates

In addition to these increases to rates of certain specific classes, a number of towns and cities in Ontario have been singled out for an increase in their key rates. These are as follows:

	Increased by	to
Amherstburg	15c.	80c.
Barrie	10	50
Brampton	10	50
Brockville	10	40
Campbellford	15	65
Chatham	10	40
Collingwood	10	60
Gananoque	15	65
Haileybury	25	\$1.35
Ingersoll	10	45
Kitchener	15	40
Listowel	10	50
Leamington	15	70
Lindsay	10	45
Midland	10	60
Napanee	10	55
Orangeville	10	50
Orillia	10	55
Paris	15	50
Parry Sound	25	1.00
Pembroke	15	75
Penetanguishene	10	60

	Increased by	to
Peterborough	15c.	50c.
Petrolia	10	60
Pictou	15	60
Renfrew	10	50
St. Marys	15	50
St. Thomas	10	40
Sarnia	10	40
Seaforth	10	45
Smith's Falls	10	50
Steelton	20	1.00
Tilbury	10	70
Tillsonburg	10	55
Walkerton	10	50
Welland	15	65

These increased key rates will, of course, affect all risks, both manufacturing and mercantile, within the limits of the respective towns.

Night Work

With the exception of such industries in which night work is a necessity to the normal operation of the plant, such as bakeries, brick works, chemical works, distilleries, power stations, flour and cereal mills, pulp and paper mills, saw-mills, gas works, and starch works, all manufacturing risks on which night work is carried on will be charged extra, as follows:

For permission to work up to 10 p.m., 20% extra on the published rates; for permission to work up to midnight, 30% on the published rates; for permission to work all night, 50% extra on the published rates.

In any case where an overtime permit is required for a period of less than one year, short period proportion of the annual charge will be demanded.

All policies on manufacturing risks on which the overtime extras are not charged must contain a warranty that overtime work is prohibited.

All the increased charges set forth above are, of course, cumulative. Take as an example the suppositious case of a munition plant in Kitchener, on which, prior to the new rules, the tariff rate was 1% subject to the 80% Co-Insurance clause. The gross charges would be increased by 15c. on the key rate and 25c. on the occupancy charge. These would be reduced by the usual reductions for protection and co-insurance to say, a total of 26c., making the rate 1.26%. For the privilege of working all night an extra charge of 50% of the published rate would be made, resulting in a final rate of 1.89%.

In justice to the Canadian Fire Underwriters' Association, it must be noted that they have chosen the most unprofitable classes of business for the increases instead of making a flat percentage increase on all rates as has been done in some of the States. Munition plants particularly have proved most unprofitable to the insurance companies. Several of the larger tariff companies have had to pay out in losses on this class of business many times the amount received in premiums thereon. The number of insurance companies which have made a reasonable profit in Ontario during the past two years is not large, and it has for some time past been obvious that increased rates to some extent would become necessary.

Newsprint Industry and the Government^{*}

One of Canada's Most Important Industries Has Been For More Than a Year the Target for Economic and Political Attacks, Which, Unless Speedily Ended, are Calculated to do it Immeasurable Injury

IN 1912 the total value of pulp and paper products exported from Canada amounted to but \$14,659,325. In the ensuing six years this amount had increased to \$52,924,888. For the current fiscal year the total exports promise to exceed \$60,000,000,—the ten months ending in January, 1918, showing a total of \$51,817,707. More than one-half of this amount applies solely to newsprint paper, of which our exports last year exceeded \$26,000,000. The figures also include chemical pulp to a considerable amount and mechanical and pulp wood and other minor products. Most of these exports were sent to the United States. The annual domestic consumption of paper produced in Canada exceeds in value \$20,000,000,—making a total annual production of pulp and paper for foreign and domestic use of approximately \$80,000,000.

The Extent of the Industry

In 1890, there were 58 pulp and paper mills in Canada, capitalized at \$7,574,118, and giving work to 2,817 employees. In 1915, the number of mills had increased to 80, the amount of invested capital to \$133,736,602, and the number of employees to 15,686.

The amount of capital at present invested in the pulp and paper industry in Canada is more than \$145,800,000. Together with transportation and electric light and power development, the pulp and paper industry ranks as one of Canada's three greatest industries.

The phenomenal growth of the Canadian pulp and paper industry is traceable, primarily, to Government restrictions placed upon the export of pulp wood from Canada and the removal of the import duty on newsprint paper and pulp by the United States Government. To these may be added the influx of a large amount of new capital, the enterprise of the manufacturers and a greatly stimulated demand for the finished product during recent years.

The value and importance of such an industry to the Dominion of Canada at the present time—in view of the fact that our unfavorable trade balance with the United States, our chiefest buyer of pulp and paper products, now exceeds \$400,000,000 annually—is almost beyond computation. It is one that, naturally, should invoke every possible encouragement, both by the people and by the Government. Nevertheless, that part of the industry devoted to the production of newsprint paper has been for more than a year the target for bitter, unprovoked and unfair economic and political attacks which, unless speedily ended, are calculated to do it immeasurable injury.

How Prices Rose

Prior to January, 1917, the price of newsprint paper was fixed by the mutual agreement of producer and consumer, without any suggestion of Governmental interference. For many years the margin of profit to the manufacturers was so small as to be practically negligible. Few, if any of them, made any money. Several of the mills were operated for long periods at an actual loss and some were forced into bankruptcy. War conditions, however, served to stimulate the demand for

newsprint paper, and brought improved conditions, although at the same time materially increased the cost of its production.

In the United States, where 80 per cent. of Canada's production of newsprint is consumed, the market price in 1916-1917 rose to between \$60 and \$70 a ton, although in Canada newsprint paper was still selling at around \$50 or less, due to the existence of unexpired contracts made under more favorable conditions. The manufacturers, pressed by their ever-rising costs, attempted to bring the price of their finished product in the two countries nearer to a parity, as they found it impossible to continue to supply Canadian consumers at less than cost and at the same time to maintain their American market on a profitable basis. Immediately there arose an outcry on the part of the Canadian consumers. These consumers, having complete control of the daily newspaper press of Canada, and acting together in concert, brought such pressure to bear that the Government at Ottawa, although it had already refused to regulate the prices of vital food necessities, felt obliged to interfere between the manufacturers and the consumers of newsprint paper. In the spring of 1917, under an Order-in-Council, passed under the War Measures Act of 1914, the Government authorized the Minister of Customs to fix the price of newsprint paper at \$50 a ton for a period of three months, and the manufacturers were required to supply at that figure, regardless of what it cost them. Up to that time the Government had no means of knowing how much it cost to manufacture newsprint paper. They fixed an arbitrary price, apparently without due consideration of the effect of their action upon the industry itself and upon our export trade.

Action in the United States

This action was immediately followed by similar action in the United States, but in that country the manufacturers had their output, or the larger part of it, sold under contract at prices exceeding \$60 a ton and they refused to furnish the paper so contracted for at the price fixed by the Government. This action on their part resulted in the Government instituting proceedings against the directors and officers of certain companies, including some of those owning mills in Canada, under the Sherman Anti-Trust Law, on the ground that the manufacturers had, through the operations of the Paper Manufacturers' Association, illegally combined to enhance the price of newsprint paper and restrict its output. These proceedings were finally settled in November last under an agreement which was made between the manufacturers of newsprint paper and the Attorney-General of the United States. This agreement provided that the Paper Manufacturers' Association should be dissolved and that the price of newsprint paper should be fixed by the Federal Trade Commission, the price from January 1 to April 1, 1918, being fixed at the rate of \$60 per ton f.o.b. the mills, subject to the right of the manufacturers to obtain a higher price from the publishers by mutual agreement. In consideration of the Government entering into this agreement, the officers and directors charged under the Sherman Act agreed to enter a plea of "nolle contendere," as the Government practically conceded the point for which they had been fighting, viz., that the price of paper should not be fixed arbitrarily until a fair price had been established

^{*}Portion of a bulletin issued by the Newsprint Section of the Canadian Pulp & Paper Association.

after they should have had an opportunity of submitting their whole case before the Federal Trade Commission. The inquiry before the Federal Trade Commission is now proceeding.

As to their Canadian customers, the manufacturers were confronted with the alternative of operating their mills at a loss or of closing them down, unless they could persuade the Government to revise the \$50 order. Their American market, as is shown, was jeopardized by the Canadian Government's action because, manifestly, American consumers of newsprint would not long continue willingly to pay \$60 a ton for a product selling in Canada, under Government order, at \$10 less. The Government, as a result of representations made to them, appointed Mr. R. A. Pringle, K.C., a Commissioner to enquire into and concerning the manufacture, sale, price and supply of newsprint within the Dominion of Canada, with a view to the ultimate determination of a fair price.

Adjustment Between Mills

The particular mills supplying Canadian publishers with paper at the Government price of \$50 a ton asked that the burden of supplying the Canadian market should be borne proportionately by all the mills, according to their production, and that in the case of mills who were furnishing the United States trade, being unable to do so by reason of having their entire production under contract, they should make a cash adjustment on the basis of the difference between the price in the United States and the price from time to time fixed in Canada. An Order-in-Council was passed, empowering Mr. Pringle to order an adjustment along these lines. It has, however, been found very difficult to arrive at a satisfactory basis of adjustment, largely owing to the varying prices which the mills, who have been selling their product in the United States, have obtained for their paper and the varying profits which they would make even if an arbitrary or average price was fixed as a value of paper in the United States. There has been no assurance, furthermore, that in the event of an adjustment being made with the newspaper publishers, they will be called upon to recoup the manufacturers the difference between the \$50 per ton and any higher price which might be fixed, as computed from the 1st of July, 1917, although Commissioner Pringle has intimated that probably that matter could be arranged by taking into account, in such event, the amount which the manufacturers would have lost by supplying the publishers with paper at \$50 per ton, in fixing the price for the future. This suggestion is wholly unsatisfactory to the manufacturers, and the complications arising out of the efforts to meet these several adjustments have but added to their business difficulties due to Governmental interference in the first place.

Commissioner Pringle's Arrangement

Mr. Pringle's commission was dated April 16, 1917, and the original Government order, fixing the price of newsprint at \$50 a ton, was extended from time to time, so that it was still operative January 18, 1918, when the Commissioner made an interim report to the Minister of Finance. It was understood that whatever price was finally fixed should be used as the basis of an adjustment between the price so fixed and the price of \$50 fixed by the Government as from the 1st of July, 1917. Instead of this understanding being carried out in the manner in which the manufacturers had been led to expect, an entirely different arrangement was made by the Commissioner, which has entailed a heavy loss, amounting to hundreds of thousands of dollars, upon the manufacturers.

During the intervening period, Commissioner Pringle had held various hearings in Ottawa and in Calgary, Alberta, at which evidence was offered as to the cost of manufacturing newsprint and the conditions affecting its price, sale, distribution and use in Canada.

At one of the preliminary hearings, the newspaper publishers attempted to force the Commissioner to investigate the affairs of the Canadian Export Paper Company, Limited, through which the paper manufacturers market their export trade. The manufacturers showed, however, that the company has nothing whatever to do with the Canadian trade or with any of the matters which Mr. Pringle had been authorized to investigate. The Commissioner very properly refused to go beyond the scope of his commission. The newspaper publishers made his refusal an excuse for withdrawing from the investigation. They refused to take any further formal part in it, or to render the Commissioner the slightest assistance, although urged to do so. The manufacturers, on the other hand, gave the Commissioner every assistance in carrying on his work. They submitted evidence as to their costs of manufacture, their capital stock, bonded indebtedness, cost and selling price, the selling price for their exports, and a full statement of their profits. They opened their books and records to the examination of an expert accountant, Mr. G. T. Clarkson, appointed by the Commissioner.

The result of this enquiry, which embraced thirteen companies and covered a period of three and a half years, from January 1, 1914, to April 30, 1917, went to show that the cost of producing newsprint paper for the first six months of 1917 averaged \$56.90 a ton. (The cost, in the meantime, has increased considerably). The Commissioner also stated in his report that: "The newspapers of Canada will have had from first of March, 1917, to first of February, 1918 (eleven months), their paper at a price of *at least \$10 a ton less than the price that the manufacturers of newsprint could have obtained in the open market.*"

Admits it an Injustice

On the basis of his investigation, Commissioner Pringle, who had also been appointed Paper Controller for the Dominion of Canada, recommended a price for newsprint in rolls, from February 1, 1918, to May 1, 1918, at \$2.85 per 100 lbs., or \$57 a ton. In his conclusions, he said:

"In making this order I am taking into consideration the retroactive feature in the order fixing prices from June 30th, 1917, to the present time, and I consider it is only equitable that the price set out in my order of \$2.85 (\$57.00 per ton) should be fixed, as I am satisfied from the evidence that the price of \$2.50 per 100 lbs. (\$50.00 per ton) for newsprint in rolls in carload lots will make the average price from the first of May, 1918, \$2.60½ per 100 lbs. for newsprint paper in rolls in carload lots f.o.b. at the mills of the various manufacturers for the whole of the period mentioned."

The prorative arrangement suggested by the Commissioner was no more satisfactory to the manufacturers than the price decided upon. The manufacturers believed they were entitled to have the \$2.85 rate apply as from the 30th of June, 1917, and that in merely fixing \$2.60½ as an average price, the Commissioner's finding deprived them of a large amount of money to which they were justly entitled. Even the Commissioner himself felt some doubt as to the fairness of his finding, for he added:

"I have fixed this price until the first of May, 1918. *Possibly I may be doing an injustice to the manufacturers,* but I have given to the matter my most serious consideration, and I have gone thoroughly and carefully into the statements, evidence, etc."

There was no doubt in the minds of the manufacturers that the price recommended by the Commissioner fell a considerable distance short of doing them justice. They were and are of the opinion that the evidence submitted to the Commissioner justified a higher price. However, they were prepared to accept the finding as an interim price, depending upon future developments to enable them to obtain one more in accordance with their ideas of what was just and equitable. Some of

them have actually had to buy paper in the States at \$65 a ton to supply their American contracts in order to comply with Commissioner Pringle's order to supply Canadian publishers with paper at \$57.

The Canadian newspaper publishers, on the other hand, again acting as a unit through the Canadian Press Association, immediately announced their unwillingness to accept the award and their determination to fight for a lower price.

The Order-in-Council appointing Mr. Pringle a commissioner and defining his duties, did not provide for an appellate court for a review of his findings, although such findings were to be made subject to the approval of the Governor-General in Council. The Commissioner, himself, expressed his regret at the absence of any provision for a judicial review. He gave the interested parties to understand, however, that he did not consider it probable that his findings would be interfered with. After the publishers had withdrawn from official participation in the proceedings and before the Commissioner had made a report, it appears that they had entered upon communications with members of the Government. At any rate, they announced through their official bulletins that they had received the written assurance of the Government that any report made by Commissioner Pringle would not be given effect until the publishers had been granted a hearing by the Council. Subsequently, a sub-committee of the Cabinet was named to deal with the report and both parties were called before it, on separate occasions, and the formality of a hearing gone through with, although it does not appear that the sub-committee had examined the record or gone very deeply into the merits of the controversy.

Commissioner's Order Modified

The sub-committee of the Cabinet made a ruling which materially modified the order made by Commissioner Pringle. The sub-committee virtually required the paper manufacturers to continue to supply Canadian publishers with paper at the old rate of \$2.50 per 100 lbs.—although Commissioner Pringle's report showed that price to be less than the cost of manufacture—and provided that the differential of 35 cents per 100 lbs., between that price and the \$2.85 recommended by Mr. Pringle, should be deposited by the publishers with the Paper Controller to be subject to later arbitration. The sub-committee, furthermore, enlarged the powers of the Commissioner and ordered a further enquiry along the lines especially desired by the publishers. Their action was later ratified by a formal Order-in-Council.

The effect of this new order made by the Government is to place the manufacturers on the defensive in respect of their export business, with the Government on the side of those who have no interest in promoting Canada's business abroad. The paper manufacturers have not alone to meet and oppose antagonistic interests in foreign countries which are trying to depress the value of the commerce in Canadian-made paper, but they find the Canadian Government, which they might reasonably expect to be at least sympathetic with their efforts to maintain their foreign trade, lined up with their antagonists and prepared to assist them in their efforts to destroy this trade.

This interference with the Commissioner's report, however it might be construed as a matter of politics, led to much trouble between the producer and the consumer of newsprint paper. In addition to being required to supply paper at a loss to themselves, the manufacturers were also required to adjust their business to the new condition which made the Paper Controller the custodian of funds which rightfully belonged to them. Not all consumers of newsprint enjoy gilt-edged credit ratings in the commercial agency lists, and it was necessary before the mills could send out shipments of paper, for them to be assured that the necessary funds had been deposited by

the customer with the Controller. This led to vexatious delays and misunderstandings, inevitable when politics and business become intermixed. Some of the mills flatly refused to ship paper except on guarantees of payment of the full price direct to themselves. Several of the customers expressed their willingness to brush aside the impositions imposed at the behest of the Canadian Press Association and to pay full rates to the mills for their paper.

Question of an Appeal

Next came the question of a continuance of the investigation under the terms expressed in the new Order-in-Council. Like its predecessor, this order contained no provision for a judicial appeal from the findings of the Commissioner. The manufacturers were confronted with the prospect of enduring another prolonged and expensive investigation of themselves, with the probability that, if they so desired, the newspaper publishers would have the verdict set aside by the Government by once more invoking the "power of the Press." On the other hand, if the subsequent findings were unsatisfactory to the manufacturers, they felt that they would be without the means of redress. They could take no appeal. Their voice could have little influence or weight with the Government, as compared with that of the newspaper publishers. As a political force their influence was practically nil.

The manufacturers took the ground that while they would submit, for the time being, to supply paper at a price inconsistent with its cost to manufacture, and while they would submit to additional probings of their business, even at the risk of the ruin of their export trade, while they would accept, under protest, the Government's withholding of money which was legally and rightfully theirs, and while they tolerated interference with their business, necessitating the payment of "differentials" as between mills doing an export trade solely and those doing a domestic trade, either wholly or in part, they were not willing to submit to going through another investigation without assurance that the final decision should be left to a judicial and not to a political authority.

To force the manufacturers into line, it was announced in the daily papers of Canada that the Government would place an embargo on the export of newsprint paper. (Subsequently an Order-in-Council was made placing the export of paper under license regulations as a war commodity.) The Government was also importuned by certain of the publishers to confiscate some of the paper mills and supply the newspapers with paper at cost.

As the situation stands to-day, the newsprint industry is still under investigation by the Government. After submitting for over a year to a general probe of their business, with its consequent disturbance and expense, the manufacturers appear to be little nearer to getting an adequate return for their product. They are still being used as pawns in the game of politics. They are without assurance that the ultimate outcome of the Government's interference with their business will leave them in possession of their mills, or if it does so, that they will be permitted to continue to operate on terms that will make such operation feasible and desirable. The publishers are deaf and blind to any interest but their own. The disturbance of a \$30,000,000 export trade—bringing into Canada capital vitally needed at the present time—appears to concern them not at all. The fact that if price regulation is made too severe, its indisputable tendency is to restrict production and in the long run to enhance the cost of the commodity affected does not appear to impress them. The fact that, in most cases, they have passed their added burdens along to their own consumers—those who buy newspapers or advertise in them—affords them no reason why they should bear any of the added expense of making the material on which their newspapers are printed.

Export Trade Through Commission Houses

Though Applied Specifically to the Relations Between the Manufacturers of Great Britain and the Commission Houses of Brazil, this Paper, Delivered Before the British Chamber of Commerce in Brazil by a Representative Commission Agent, is Full of Suggestive Material for Canadian Manufacturers

IN considering the question of our commercial position in this country at the conclusion of the present war and bearing in mind the possible future activity of our enemies, it seems to me that one of the fundamental points to be considered is the relationship between the Manufacturers of Great Britain and the Commission Houses or Traders at this end.

There are two methods by which the manufacturer at home reaches the consumer in Brazil, namely, by direct negotiation, or, through the intermediary of a commission house acting as his sole agent or through any commission houses who may care to apply to him for quotations. By far the greater part of British business is done in this latter manner and, therefore, it is most important that manufacturers and commission houses should see eye to eye with one another and work closer in harmony because it is quite certain that the circumstances of the future will necessitate greater co-operation, attention to detail and general broad-mindedness, (which shall not fail to appreciate the importance of commerce to our welfare as a nation) than has been the case in the past.

Afraid of the Commission Houses

One of the first things that strikes the observer is the apparent fear of the commission houses that the manufacturer may at any time, after he has built up a business through their intermediary, step into the market and do business direct with the consumer. This fact makes one suspicious of the other and suspicion is an enemy of good and successful business. There may be certain cases where direct business in this country is more profitable and satisfactory to the manufacturer but these cases are limited, and so it is important to remove any idea of suspicion that may exist. Suspicion is always most easily counteracted by frankness and I think this is the only remedy to overcome it in business, but there are also one or two pertinent facts which should convince merchants here that there is little danger of manufacturers going behind their backs for a fairly long period after the war and during this time the merchants should be able to show that they are able to handle business so well that the manufacturer will not wish to add to his responsibilities by opening up here on his own account.

The advantages to a manufacturer in selling through an intermediary are (1) that for little outlay he can cover a large selling area, (2) and most important, that he receives cash or at least very prompt payment for his goods.

A little study of Brazilian conditions would soon convince manufacturers that the huge size and scattered population of this country render it a difficult one in which to direct business, principally because of the expense of maintaining a representative with office staff, etc. By doing business direct the manufacturer saves the discount or commission given to an intermediary but unless the volume of the business is very considerable, this saving will not compensate the extra expense although, no doubt, his business would receive perhaps more attention than a commission house, handling many things, is able to bestow.

The second factor of cash payment is most important for at the conclusion of this war, the cost of raw materials, labour, taxes, etc., is going to be much greater than previously, which means that much larger sums of money will have to be allocated to these accounts. Money will be dearer, so that it may be said that the amount of cash available will govern the manufacturer's output and especially when it is recalled that the whole output of most firms is already booked up for periods up to two years after the war. When manufacturers have many orders in hand they naturally wish to get through them as quickly as possible and to do so they cannot afford to lock up money and so, no doubt, for a few years manufacturers will demand much more stringent terms of payment simply to enable them to have the cash to carry on and turn over as often as possible, and this convinces me that there will be little desire on their part for some time to come, to do business direct, which, of necessity, in this country means credit.

The foregoing remarks lead one to think of another matter, that after the war it is probable that merchant houses will get even less assistance of a credit nature from manufacturers than formerly. Manufacturers will certainly demand more stringent terms of payment and the prospect is that only the most strong financially will concede terms more favorable than "monthly account." In the case of others we may see respected commission houses called upon to pay "one-third with the order," not because of doubts of their ability to pay but simply that the manufacturer may have the cash to carry on. Manufacturers have their capital invested largely in plant and raw material and the remainder is not at any time for carrying on a money-lending business. It is better that this fact should be appreciated thoroughly now by both parties, especially the merchants, because if any credit is given, they will have to be responsible for same. Certain facilities must be conceded by manufacturers such as giving greater discounts, but the fact remains that the onus of credit will fall more so than ever on the merchants, and they should prepare now for what may be necessary in the future.

Manufacturers Should Show Initiative

There may be many complaints which manufacturers have to make against agents or commission houses handling their affairs, and I do not propose to enter into them beyond saying, that as the representative of a manufacturer dealing only with commission houses, I have come to the conclusion that if the manufacturers showed more initiative there would be less complaint about commission houses.

The commission houses are the best salesmen that Great Britain possesses. They maintain a steady flow of orders to the home country, pay promptly and seldom figure among the bad debtors. Let me ask each manufacturer a simple question: "Who has built up your foreign business, commission houses or yourself?" I venture to suggest that nine out of ten would have to reply, "The commission houses." Well is it not worth while to cultivate them to the best of your ability and even as you would some particular individual client of the firm? In the first place, do you know under what con-

ditions they are working, and what are the expenses, risks, etc., which they incur? Do you pay them a sufficient commission for this work and enough to keep their interest from flagging in pushing your wares? Have you a properly organized mailing department which keeps them up-to-date with samples, alterations in design and prices, advertisement catalogues and the many little things which indicate that a manufacturer is wide awake and willing to help, and which is such an incentive for one here to get out and do something big? When suggestions are made for facilitating the sale of your goods do you give same the consideration which they deserve, because remember, you may gain a lot more than the commission house by adopting them? Have you ever considered how much it would facilitate negotiations for all concerned to maintain one of your own men with your particular agent, each paying something toward the expense, a man who would thoroughly know your business and look after it and working with the agent would have every assistance possible from him for pushing your sales? Do you know what your foreign competitors are doing? Finally, have you ever been in Brazil? Do you realize its magnitude; its scattered population, its difficulties, its possibilities, present and future?

The day has passed when business could be done in a haphazard form and according to whim and desire. There is piling up at home a huge debt which some day has to be paid, and the principal method of doing this will be by trade, preferably with foreign countries. Therefore, every owner and director of an industrial undertaking in Great Britain has an additional responsibility thrust upon him, second only to the financial welfare of his company, and which is his responsibility to the State of increasing trade abroad as much

as possible. The day has passed when a man could say, "My works are large enough," or, "I have made enough money for myself and family." That is selfishness, narrow-mindedness and unpatriotic.

I am certain that the merchant houses here will do their share, if the manufacturers will rise to the occasion. Come out abroad and see for yourselves. Meet the British business men of Brazil and discuss matters with them. Come to the British Chamber of Commerce in Brazil, which has been almost entirely organized and financed by the merchant houses here for the furtherance of British trade with Brazil and where every possible assistance is held out to you, and I guarantee you will return with a vastly improved idea of Brazil and to the great benefit of your business and yourselves.

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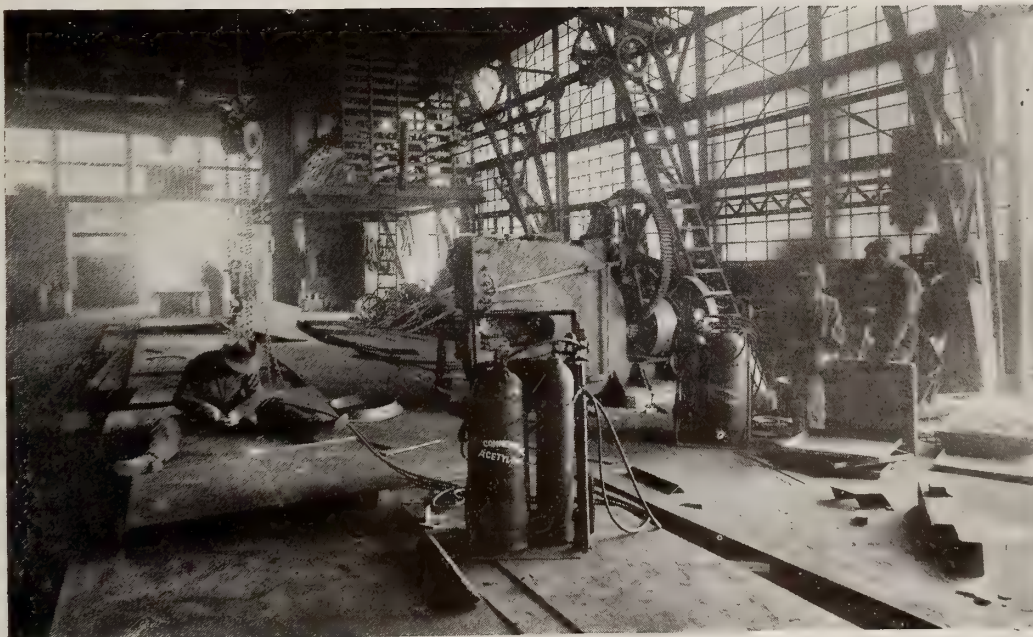


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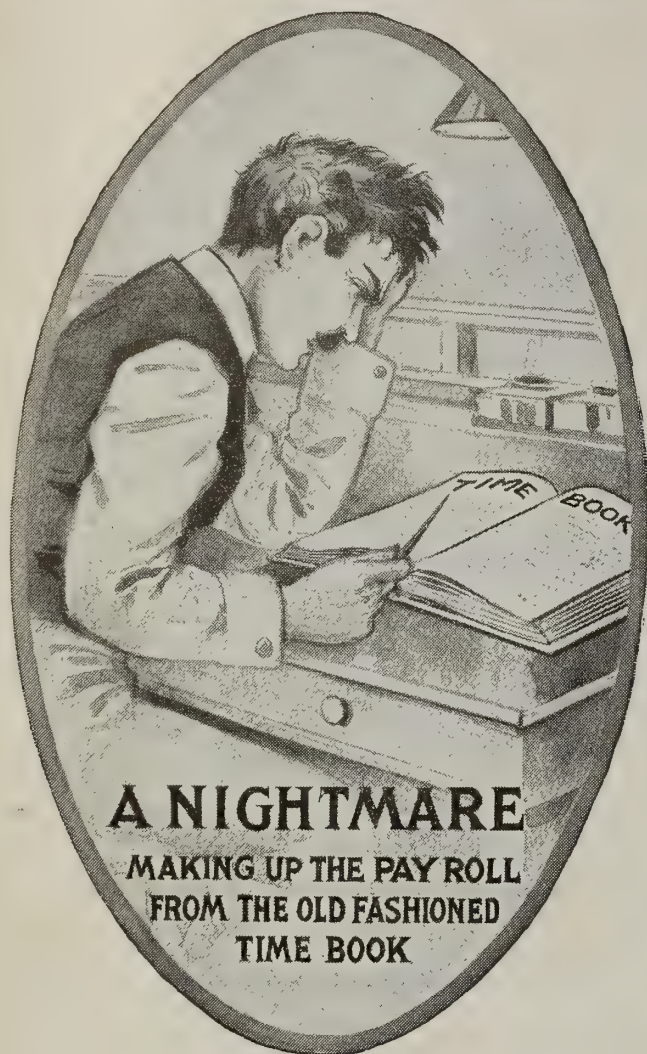
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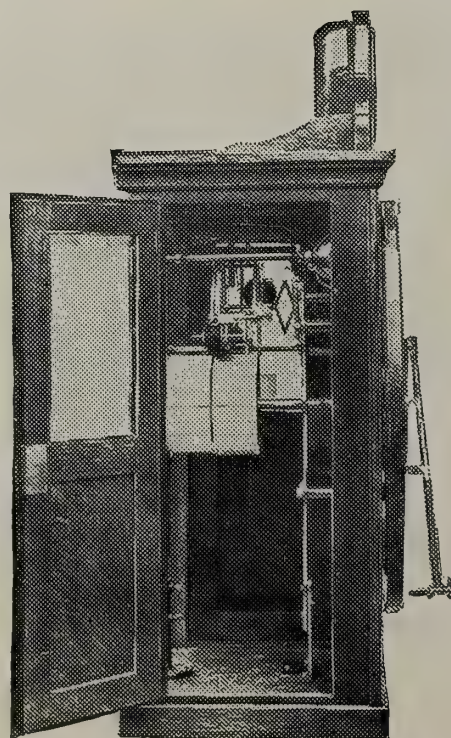
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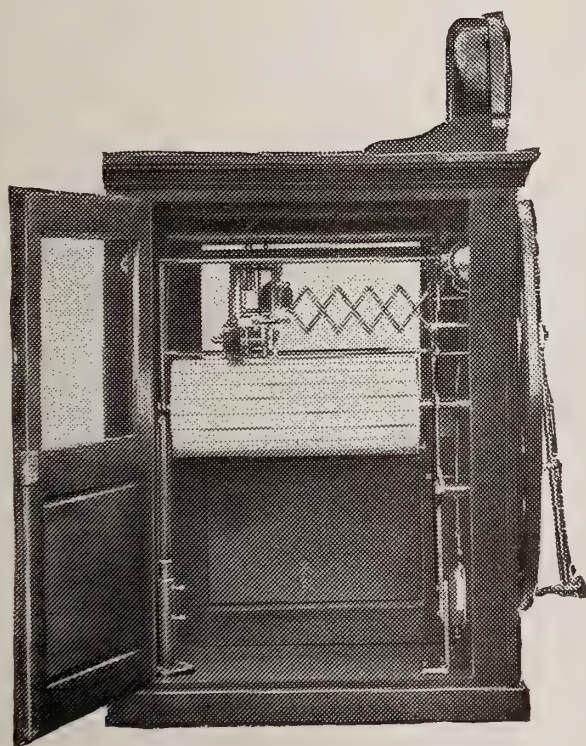
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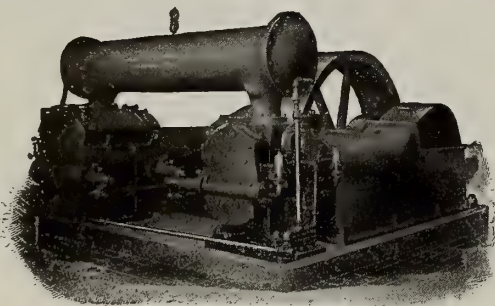


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All managers interested in employment problems from the modern point of view will find a good guide in a pamphlet of sixty pages, entitled "The Employment Department and Employee Relations," which is the joint work of F. C. Henderschott, of the New York Edison Co., and F. E. Weakly, Employment Manager of Montgomery Ward & Co.

This book describes the organization and duties of an employment department, the function of the employment manager, his relations to other departments, the sources of the labor supply, and the scientific method of selecting people for their jobs. This last includes tests for general intelligence, special intelligence, and manual dexterity; physical examinations; and the observation of temperament. Mental capacity tests which have been found reliable are given in full.

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Injurious Legislation Stopped in Nova Scotia

Efforts to Enact Measures Prejudicial to the Interests of Manufacturers Meet
With Scant Success, Thanks to the Vigilance of the Legislative
Committee of the Maritime Branch

DURING the recent session of the Nova Scotia Legislature, the legislative committee of the Maritime branch kept in close touch with what was transpiring and, thanks to their efforts, considerable legislation, which it was felt would be inimical to the interests of the manufacturers of the province, was held up.

A number of changes in the Nova Scotia Workmen's Compensation Act were proposed by the miners. These were as follows:—

1. Rate of compensation increased from 55 to 65 per cent. of a man's earnings.
2. A minimum rate of \$10 per week for all partial disability cases.
3. In fatal accidents, a stated rate of \$5 per month for each child, irrespective of the number of children in the family.
4. "Palm Abscess," "Miners' Knee," and "Miners' Asthma" be placed on industrial disease schedule.
5. Compensation to be paid for loss of time occasioned by having artificial limbs broken while at work. Also compensation to cover damages done to such limbs.
6. That checkweighmen and trade union committees and workmen employed by trade unions be brought under the Act.
7. That section 4 of the Compensation Act be repealed.

The legislative committee were able to prevent these changes from being introduced into the House at all.

Employees' Committee Act

A measure conceding extraordinary powers to organized labor was Bill No. 149, entitled the Employees' Committee Act. Under the provisions of this legislation, if enacted, an employer having ten or more employees would be compelled to meet a committee of his men when any point of difference arose or, failing to do so within 24 hours of receiving written notice, be liable to a penalty of not less than \$100 per day. The paragraphs of the bill dealing with this matter are as follows:—

"Whenever any dispute or difference shall arise between any employer and his employees in respect to any matter of wages, hours of toil, working conditions, discrimination against workmen or any matter or thing affecting the relations between employer and employees and a committee is regularly appointed by the said employees to adjust the matter of difference or dispute with the said employer, it shall be the duty of the said employer to meet the said committee and to hear the matter of difference or dispute.

"Any committee regularly appointed as above set out shall by notice in writing delivered to the employer advise the said employer of the appointment of the said committee and of the matter or thing which the said committee is authorized to adjust with the said employer and in the same notice shall demand a hearing of the said employer within twenty-four hours.

"If after twenty-four hours' notice duly given, as above set forth, the said employer neglects or refuses without reasonable excuse to so meet the said committee and hear the said matter or thing relating to the said difference or dispute, the said employer so neglecting or refusing shall be liable to a penalty of not less than one hundred dollars or more than one thousand dollars for every day that he, the said employer, so neglects or refuses to meet the said committee as aforesaid."

This bill, it is not surprising to find, was shelved, though it came before the House and was discussed.

Under Bill No 127, amending the Nova Scotia Factories Act of 1901, provision was to be made for the establishment of a minimum wage of \$1.25 per day, except for apprentices, who might be paid a wage of not less than \$1.00 per day. It was also to be provided that "wages earned by any person employed in or about any factory, shall be paid weekly, provided the weekly wages may be calculated in such a way as to allow back time." A new section would make it obligatory on all employers to keep and maintain free of expenses to the employees a medical or surgical chest containing a reasonably sufficient supply of bandages, gauze and other appliances for the treatment of persons injured or taken ill upon the premises.

This bill was also shelved through the efforts of the legislative committee.

Insurance Restrictions

Under Bill No. 137, amending the Act prescribing conditions in policies of fire insurance, it was proposed to require that every policy of insurance against loss by fire in respect of any property situate in Nova Scotia must be signed by an agent resident in the province at the time the contract is made; agents' appointments must be filed in the office of the Provincial Secretary; and any person or company issuing, receiving or delivering, or having in his possession in Nova Scotia, a policy not in conformity with above clauses shall be liable to a penalty of fifty dollars (\$50.00) for each offence.

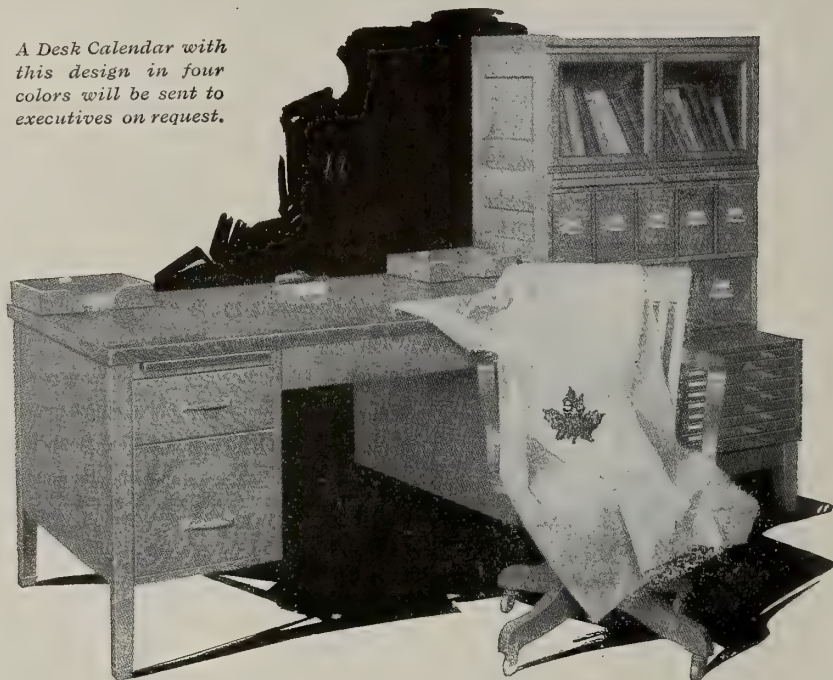
This measure would, of course, have prevented unlicensed companies from doing business in the province. It was shelved.

Bill No. 123 also dealt with the subject of insurance. Its object is concisely stated in Section 2, which states that "no insurance company shall do or carry on in Nova Scotia any part of its business of insurance unless and until it is thereunto licensed under the Insurance Act." Section 4 prohibits any person from soliciting or accepting any insurance risk or issuing or delivering any interim receipt or policy of insurance, etc., on behalf of or as agent for an insurance company not licensed under the Act. This measure is of course aimed at the unlicensed companies. It was passed with certain amendments.

Canadian shippers will find that C. J. Tower & Sons, customs agents at Buffalo, Black Rock and Niagara Falls, are in a position to extend assistance in customs work in connection with shipments to United States points. The firm are customs agents for the Canadian Northern, Canadian Pacific, Grand Trunk, T.H. & B., T. & N.O., Erie, Lehigh Valley, Michigan Central, New York Central, Pennsylvania, Pere Marquette and Wabash Railways, and the Wells-Fargo Express.

Mr. C. J. Tower is well posted in customs matters. He entered the United States customs service in 1890 as a messenger, and, after working up to be special deputy collector, he resigned in 1913 to do the customs business for the various roads mentioned. His knowledge of customs matters places him in a position to properly handle any matters with the Treasury Department, Washington, that it is necessary to refer to the department.

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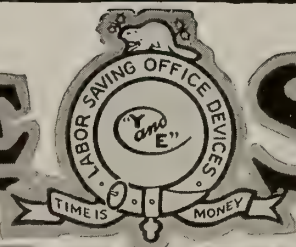
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Manufacturers' Holdings of War Bonds

Relation of the Bonds to Bank Loans, With Advantages and Disadvantages of Retaining Funds in These Securities—Bonds as Dividends and Objections to Their Use for This Purpose—Preferable to Employ Them in Permanent Reserve

By H. M. P. ECKARDT

TO all of the domestic war loans issued by the Dominion Government Canadian manufacturers have given extensive support. Individuals, firms and corporations have taken large amounts, and in some cases the balance of these investments has been steadily rising; also the manufacturers have been influential in placing large amounts of bonds with their employees. It is understood that a considerable part of the \$750,000,000 of war bonds issued in Canada represented loans by our Treasury to the Government of the United Kingdom. Ottawa borrowed the money from the Canadian public and loaned it to the Imperial Munitions Board and other British purchasing agents, who disbursed the funds to our manufacturers and producers. Thus in one sense the manufacturers who took the bonds were merely giving credit in connection with sales of their products. They extended credit, however, to a party other than the purchaser of the goods. The Dominion Government acted as an intermediary—it, so to speak, took over the claims which our manufacturers had on the British Government, giving to them in exchange its own obligations. Of course the manufacturers were not required to take payment in securities for a large proportion of their output—that would have impaired their ability to finance their operations, unless they were able to get continuous loans from bankers nearly up to the value of securities held. The general public took the bulk of the war bonds, paying for them in the currency of the country, and thus it has been possible to settle with the manufacturers for the greater part of their output in current funds which were available for buying raw material, paying wages and meeting the other expenses of manufacture.

A Different Form of Credit

Now it is to be remembered that the credit granted by the manufacturers through taking Dominion bonds in part settlement of munitions, etc., shipped to Europe, differs in some important respects from the credit granted to ordinary customers. In the ordinary course when goods are sold on credit to a customer the manufacturer draws at three or four months upon the purchaser, perhaps discounting the drafts at the bank and thus recovering at once the capital invested in the contract, together with the profits. Assuming that the drawees duly accept and pay the bills, a continuous stream of such transactions does not cause the manufacturer's discount line at the bank to become unwieldy—the old paper perhaps runs off as fast as the new paper is discounted. The manufacturer's liability to the bank in this case is characterized as indirect—he merely guarantees that the promisors and acceptors will pay on the respective due dates.

On the other hand, when the credit is given through subscribing to the war loans, the manufacturer receives an instrument which is rated higher than the promissory note or acceptance of his trade debtor. The Government of Canada is the prime obligant, and all doubts as to the safety of the

paper may be dismissed. Moreover, high-class Government paper as a general rule may be sold, or pledged as security for loans, with the greatest facility. Technically speaking, however, the paper runs for long terms—five, ten and twenty years—and if the holder wishes subsequently to make steady use of the funds in his business, he must sell the bonds or carry a more or less permanent loan against them. Notwithstanding the solidity of the security there are serious objections to permanent loans of this description, especially if the amounts are large. When a bank carries for a manufacturer year after year a large loan on war bonds amounting to around 90 per cent. of the face value of the bonds, the bank's money is tied up. The economic effect is much the same as if the bank itself had bought the bonds and held them. While the banks subscribed directly to the first war loan, they have not been required to subscribe to any of the subsequent flotations, the reason being that the Government desired to avoid locking up the bank funds in that way.

When Investment is Advantageous

If the circumstances of the manufacturer are such as to permit him to carry his war bonds without permanent loans at the bank; if he requires to utilize the bonds as security for loans only for five or six months of each year, his investment in them may be altogether advantageous. Perhaps if the bonds had not been bought the manufacturer would have carried his surplus money during the slack season in the form of a special deposit in the bank. The bonds give him a higher interest rate throughout the period in which they are clear; and during the other period, in which they figure as collateral to loans, the bonds would probably be serviceable in ensuring a comparatively low discount rate. Collateral of that class always commands lowest rates. Again, large subscriptions to the war bonds by means of bank loans are unobjectionable when the borrowing manufacturer can steadily reduce the loan, through accumulation of profits or otherwise—the reductions perhaps being on a scale large enough to bring the loan down to small dimensions in the course of a year or fifteen months.

Some Companies Over-Subscribe

So far as sales of the bonds are concerned, financial houses and other large subscribers to the war loans often enter their subscriptions for larger amounts than they intend to hold. Their heavy subscriptions help to make the flotations a success, and their subsequent sales of the bonds dispose of the extra supplies and clear off their abnormal bank loans. Many manufacturers doubtless have followed this same policy in subsequently selling off a part of their original subscriptions. In this connection it is well to note that in the Anglo-Saxon countries there has been developed during the war a rather strong sentiment against unnecessary sales of war bonds. The

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Capital Paid Up	-	-	\$16,000,000
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general feeling is that citizens subscribing to the war loans should endeavor to hold the bonds, as by so doing they render more valuable financial support to the Government. Of course there must be a considerable volume of sales when the flotations are so large, but if the subscribers in general are actuated by a strong desire to hold the securities as far as possible on their own capital, the market for the bonds is benefited, and this reflects advantageously on the position of the national treasury. So it will happen that many manufacturers holding the bonds will be reluctant to sell. They will endeavor to carry the bonds somehow, perhaps cutting down personal expenditures and taking other self-denying measures to do so. The point is that the prevailing sentiment against unnecessary selling stands, for the time being, somewhat in the way of free liquidation by a manufacturer who holds war bonds. However, if need be, the bonds can always be sold, and they constitute a high-class reserve. It should be said that here in Canada a considerable number of manufacturers are somewhat cramped for want of working capital, and when that is the case the parties should not be expected to buy and carry large amounts of war bonds.

War Bonds as Dividends

In the United States some of the large corporations have tried the experiment of distributing war bonds to their stockholders in the form of extra dividends or bonuses. One or two Canadian companies have tried out the same plan. Regular dividends could not well be distributed in this form, as the stock-holding classes usually need their regular dividends for current expenses, and if they received the dividends in the form of war bonds many of them would be obliged to sell the bonds at once. Even in the case of an extra dividend it is probable that many of the stockholders receiving it would think it necessary to sell the bonds. Then there is the consideration that the distribution of a dividend in war bonds, when the lowest denomination of the latter is \$50, involves much work at the distributing company's office, and probably in brokers' offices—it is necessary to buy, sell or swap the warrants or rights, perhaps on a large scale, before the bond denominations can be made to fit the requirements of holders of the certificate. It has been noted that the distribution of an extra dividend in this form by a large corporation is usually followed by extensive selling of the bonds in the market; and it would seem that unless there was a good prospect of the stockholders retaining the bonds, the corporation might as well sell them and distribute its extra dividend in cash. Finally, there is the consideration that this method of disposing of the war bonds is not available for many concerns, for the simple reason that their circumstances do not permit them to pay bonuses. It may be the case that all they can do is to maintain regular dividends and make the necessary appropriations for depreciation and other reserves.

Investment for Reserve

Probably the war bonds may be utilized to best advantage as a part of the industrial company's permanent reserve, or sinking fund accumulations if the terms of its contract permit. With reference to the sinking fund the contract usually stipulates that the company shall pay the moneys to a trust company or another responsible institution. Even so, it may perhaps be permissible to make the payments to the trustee in the form of war bonds, or to have the trustee invest the funds in such bonds. Again, a reserve for new buildings, replacements, etc., in case of which it is not expected that the expenditures will be made for a year or two, might conveniently be carried in the form of war bonds—the manufacturer would probably select bonds with short maturity, so as to minimize the chances of loss through declining quotations.

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RESERVE FUND \$7,000,000

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HEAD OFFICE . . TORONTO

By carrying short-date war bonds for this purpose the rate of interest obtained is better than that realized through carrying the money on deposit with a bank.

The question of the suitability of the war bonds as a reserve for excess profits and income tax payments might also be discussed. It has been noted recently that private funds, as distinguished from bank funds, were offered from time to time in the call loan markets in Montreal and Toronto; and as the balance sheets of one or two of the larger industrial corporations show call loans to a considerable amount among the items of the assets, it is supposed that these companies were providing in that way the necessary reserves for tax payments. In some cases the private loans on stock market collateral have been made for a period of six months instead of at call. Such loans would come due in the fall, about the same time as the excess profits tax is payable. It is to be remembered that corporations are to pay the excess profits tax or the income tax, whichever is the greater. Probably the increase of the corporation income tax from four per cent. to six per cent. of net profits, as provided for in the recent budget announcement, will have the effect of making a considerable number of manufacturing concerns liable for the income tax instead of the excess profits tax. It would have this effect in cases where the additional two per cent. on net profits served to bring the income tax liability above the level of the excess profits tax liability. In such cases it would be necessary to have the reserve for taxation purposes so that it would be available in May or June. As the liability is so imminent it is necessary to do something more than merely to debit profit and loss and credit the taxation reserve. A mere bookkeeping reserve of this nature would perhaps answer the purpose satisfactorily if the company has the requisite funds in hand or a sufficient reserve of discountable paper available for use at the bank, or if the officers of the company are assured that the balance of the inventories will run down in such manner as to yield up the money as it is needed.

Present Prices are Stable

On the whole it must be admitted that the call loans or special deposits in banks appear to be more suitable for taxation reserves as prepared by large companies, and the smaller companies will perhaps prefer to carry their reserves in their bank accounts. With reference to the call loans on Canadian stock market collateral, it might be observed that in general these loans have not been so surely realizable at sharp call since the minimum price lists were established last October. If there are among the collateral a number of stocks with current market quotations at or near the official minimum prices, the natural inference is that such stocks might not be realizable quickly in large amounts; and if the collateral cannot be sold with dispatch, the call loans may not be such a quick asset as their name would imply. In some cases it would doubtless be feasible for the manufacturer to carry his reserve for taxes in the form of war bonds. If so carried it would, of course, be necessary to sell them or borrow upon them when the time for paying the taxes arrived. While the present arrangement for stabilizing the market for Victory bonds continues in effect there will be no loss through selling at falling prices, although it may perhaps be necessary to make timely arrangements for the sale in cases where the holdings are large. Holders of bonds, however, would not be justified in assuming that the present price will be permanently in evidence. Should fundamental conditions in the market change materially, the committee in charge of the Victory bond market would doubtless respond to the new state of affairs by raising or lowering the prices, as the occasion warranted.

THE ROYAL BANK OF CANADA

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Capital Paid Up	- - - -	12,911,700
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Abitibi Power & Paper Company Issues a Million of Mortgage Debenture Stock

A new issue of \$1,000,000 7 per cent. convertible mortgage debenture stock of the Abitibi Power & Paper Company, Limited, is being offered by the Royal Securities Corporation, Limited, at a price of 87 and accrued interest, yielding over 8½ per cent., particulars of which are given in the company's prospectus appearing elsewhere in this paper.

The Abitibi Company is one of the largest companies engaged in the production of newsprint paper and sulphite and ground wood pulp. Its mills are located at Iroquois Falls, Ont., and have an annual capacity of 62,000 tons of newsprint paper, 21,000 surplus tons of sulphite pulp, and 22,500 surplus tons of ground wood pulp. The company controls under lease over 1,000,000 acres of pulpwood lands with water-powers approximately 48,000 horsepower.

An estimated valuation of the company's property as a going concern, made by George F. Hardy, consulting engineer of New York, October 13, 1917, gives a total of at least \$13,200,000, against which the company has an outstanding funded debt of \$6,400,700, including the present issue. The earnings for the year ending December 31st last, available for interest and depreciation were \$1,133,275.07. Interest for the year absorbed \$341,411.05, leaving a surplus of \$777,864.02, or eleven times the amount of the annual interest required for the new issue of 7 per cent. convertible mortgage debenture stock.

The company's product is marketed chiefly in the United States, where the demand for newsprint paper and pulp exceeds the available supply and is constantly expanding. The expansion of the Canadian pulp and paper industry in recent years has been one of the marvels of industrial growth. In

six years our exports have advanced from an annual value of \$14,659,325, to one of \$51,924,888. For the current fiscal year the exports will amount to about \$60,000,000, and the total output, including domestic consumption to \$80,000,000. The Abitibi Company's establishment is of modern construction throughout and its mills among the best organized and best equipped in Canada.

The new issue is convertible into common stock at par any time after March 1, 1921, and is callable at the company's option at 110 per cent. and accrued interest at any time on or before that date, making it an exceedingly attractive offer.

Steel & Radiation, Limited

Profits for 1917 Were Considerably Less than those Earned the Previous Year

Profits of Steel & Radiation, Limited, for 1917 amounted to \$289,552, which compares with \$372,319 in 1916 and \$187,979 in 1915. The whole profit from operation for the year was carried into reserve, this step being taken in view of the uncertainty of the munitions business. As a result of this policy reserves for depreciation of permanent plants and amortization of munition plants are increased by \$166,857 to \$558,300. In addition to this \$166,857, \$47,525 was devoted to writing off the balance of discount and expense on bond issue. There was left a balance to carry forward of \$49,803.

Apart from the company's activities on munitions, it is pointed out by the president, Sir Henry Pellatt, that regular business in heating product, steel sash and expended metal showed an increase for the year of nearly \$100,000, notwithstanding the unfavorable conditions in the building trade;

UNION BANK OF CANADA

Established 1865

Head Office, Winnipeg

Paid-up Capital.....\$5,000,000

Reserve Fund.....\$3,400,000

Total Assets over.....\$140,000,000

FACILITIES FOR HOME AND FOREIGN TRADE

With 305 Branches in Canada, from Halifax to Prince Rupert, the Union Bank of Canada offers excellent facilities for the transaction of every phase of modern banking business.

In connection with export trade, attention is particularly drawn to the advantages offered by the Foreign Exchange Department of our London (England), New York and Montreal Offices, and Manufacturers and Exporters are invited to avail themselves of the Commercial Information Bureaus established at these Branches.

NEW YORK AGENCY: 49 WALL ST., NEW YORK CITY---GEO. WILSON, Agent.

sales reached \$555,306, exclusive of munitions contracts. Looking to the future, he says that the year opens with good prospects in heating products, sash and expanded metal, owing to the general development of business throughout Canada calling for building operations of various kinds.

With reference to the decline in profits for the year, General Manager H. H. MacRae states that the figures do not represent the true situation, for the reason that the profits from the investment in the King plant in respect of six-inch shells did not begin to be realized until the last two months of the year.

As regards the normal products of the company, Mr. MacRae refers to the building depression which has prevailed, and to the recent improvement in relation to general construction owing to war activity; further, he points to the prospects for an early resumption of building activity on a broader scale, despite the high cost of labor and materials. However, such has been the improvement in the general output that the company is now able to nearly meet fixed charges, including bond interest, independently of munitions profits.

Toronto Paper Mfg. Co.

Earnings for Year Ending March 31st, 1918, Were Slightly Smaller than for the Preceding Year

Earnings of the Toronto Paper Mfg. Co. for the year ended March 31st, 1918, were \$198,039, as compared with \$212,794 for the preceding twelve months. The company paid during the year regular dividends of 6 per cent., and a bonus of 4 per cent. as a partial compensation for the period when no dividends were paid. In addition to bond interest of \$28,540, the sum of \$32,000 was carried to depreciation reserve. The remainder was added to profit and loss, bringing the balance to the credit of that account up to \$254,089. An interesting feature of the report was the reduction of the goodwill account by the transfer of \$100,000 from the depreciation reserve.

Wm. A. Rogers, Limited

Falling Off in Business Was Due to the Decline in Silverware Trade in the United States

The seventeenth annual meeting of Wm. A. Rogers, Limited, was held on Monday, April 15th. The annual report presented to the shareholders showed net profits for the year amounting to \$81,855.41, as compared with \$240,648.84 for last year. The difference is accounted for by the falling off in the silverware trade in the United States during the latter months of the year, and the disturbed conditions growing out of the entry of that country into the war.

The company also purchased during the year the business of Simeon L. and George H. Rogers Company, and important changes were made in the administration of the business; \$222,800 of additional preference stock was issued in connection with this purchase. As a result of the agreement with Canadian Wm. A. Rogers, Limited, it has been necessary to again assist that company in its dividend payments. This agreement extends until 1924.

During the year \$600,000 of 6 per cent. serial bonds were issued, most of which have been sold. The interest on these bonds was paid, amounting to \$19,421.84, as were also the quarterly dividends on the preference stock and one quarterly dividend on the common shares.

Another event of the year was the formation of Wm. A. Rogers, Limited, of California, to handle the business on the Pacific coast. This company is a subsidiary, and is reported to be making satisfactory progress.

Established in 1836. Incorporated by Royal Charter in 1840.

THE BANK OF BRITISH NORTH AMERICA

Paid-up Capital - \$4,866,666
Reserve Funds - \$3,017,333

Statement to the Dominion Government (Condensed), 31st January, 1918

LIABILITIES TO THE PUBLIC.

Notes in Circulation.....\$ 5,312,540
Deposits.....56,732,358
Due to other Banks.....884,788
Bills Payable (Acceptances by L/O) 1,366,843
Acceptances under Letters of Credit (as
per contra)1,113,404
\$65,409,933

ASSETS.

Cash on Hand and in Banks.....\$13,156,263
Deposit with Government o/a Note
Circulation.....245,822
Deposits in Central Gold Reserve.....1,970,000
Government, Municipal and other
Securities.....12,591,380
Call and Short Loans.....7,521,447
Current Loans and Discounts and
other Assets.....36,410,840
Liabilities of Customers under Letters of
Credit (as per contra)1,113,404
Bank Premises2,409,292
\$75,418,448

Riordon Pulp & Paper Company, Limited

Montreal

SULPHITE FIBRE WOOD PULP FOR PAPER MILLS

CAPACITY 60,000 TONS PER YEAR

HAWKESBURY "IMPERVIOUS SPRUCE" SHEATHING in 36 and 72-INCH ROLLS

SPRUCE LUMBER, CLAPBOARDS CEDAR SHINGLES, RAILWAY TIES, FENCE POSTS

Pulp Mills: Hawkesbury and Merritton

Saw Mills:

Calumet, L'Annonciation, Boule, Quennouille, P.Q.

WE DO NOT MAKE PAPER

The Merchants Bank of Canada

Head Office, MONTREAL Established 1864

Paid-up Capital	-	-	-	-	-	\$ 7,000,000
Reserve Funds	-	-	-	-	-	7,421,292
Total Deposits (Dec. 1917)	-	-	-	-	-	103,000,000
Total Assets (Dec. 1917)	-	-	-	-	-	136,000,000

PRESIDENT, Sir H. Montagu Allan, C.V.O.
 VICE-PRESIDENT, K. W. Blackwell
 MANAGING DIRECTOR, E. F. Hebden
 GENERAL MANAGER, D. C. Macarow
 SUPT. OF BRANCHES AND CHIEF INSPECTOR, T. E. Merrett

DRAW ON YOUR CUSTOMERS

through the Merchants Bank. With Branches in all parts of Canada and correspondents abroad, this Bank is in a position to present Drafts promptly, have them accepted, and collect payment, with the least possible trouble and cost to you.



The Manager will be glad to take up this matter with you.

236 Branches in Canada Extending from the Atlantic to the Pacific.

NEW YORK AGENCY, 63 AND 65 WALL ST.

THE BROWN BROTHERS LIMITED

Simcoe and Pearl Sts. TORONTO



MANUFACTURERS OF
 ACCOUNT BOOKS, LOOSE LEAF LEDGERS
 Binders and Specialties
 LEATHER GOODS—DIARIES—STATIONERY
 Printers' and Bookbinders' Supplies

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Dominion Linens, Limited

Big Increase in Earnings for 1917 Are Reported by this Industrial, These Being Over 61 Per Cent.

The financial statement of the company for the year ended Dec. 31st, 1917, shows an increase in earnings of more than 61 per cent. over the previous year. Profits, after deducting cost of management, paying bank interest and writing off bad debts, amounted to \$50,578, compared with \$31,326 in previous twelve months. Dividends on preferred stock amounted to \$16,915; \$13,153 was allowed for depreciation of buildings and plant, and \$5,000 for depreciation of inventories. After writing off balance of charter and organization expenses, etc., there remained surplus for year of \$6,679, which brings profit and loss balance up to \$29,767.

Inventories of goods manufactured and raw materials stand at \$196,590, compared with \$149,997 at the end of the previous year. Real estate, plant and buildings are now valued at \$372,386, compared with \$376,671, the latter amount including trade marks and goodwill, which are now valued separately at \$95,000. Cash on hand and in bank amounts to \$14,404, and bills and accounts receivable to \$56,975. Current liabilities total \$64,106.

Newsprint Manufacturers Protest

In Reply to Memorial of American Newspaper Publishers, Deny They Are Shipping to Unfriendly Publications

A straight-cut denial of the accusations contained in a memorial sent to the Dominion Government by the American Newspaper Publishers' Association to the effect that Canadian manufacturers were exporting newsprint to unfriendly alien newspapers has been made by the newsprint section of the Canadian Pulp & Paper Association. The manufacturers held a meeting in Montreal following announcement of the action taken by the publishers and drew up the following reply, which was sent to Sir Robert Borden:—

"The newsprint section of the Canadian Pulp & Paper Association, comprising the principal manufacturers of newsprint in Canada, notes with astonishment a resolution purporting to have been passed by the American Newspaper Publishers' Association, at their annual convention in New York, to the effect that a substantial percentage of present exports of newsprint paper from Canada and the United States is going to newspapers unsympathetic with the interests of the Allies, and demanding that the War Trade Board of Canada prohibit exports of newsprint paper from this country to other than Allied countries.

"The manufacturers refrain from commenting upon the unusual circumstance of an organization of business men in a foreign country undertaking to control through the Government of Canada any part of the export trade of this country, but would point out that so far as the export of Canadian newsprint is concerned, it is all done under licenses, issued by the War Board of Canada, which is a sufficient guarantee that none of these exports are sent to unfriendly alien countries.

"The shortage in the supply of newsprint paper, about which the American Newspaper Publishers' Association is justly concerned, is due, in a large measure, to the ill-advised attempts of the newspaper publishers to obtain their supplies of newsprint paper at a price inconsistent with the cost of its production. These attempts have led to prolonged Government investigations in both the United States and Canada. In the United States some of the mills formerly devoted to the production of newsprint have found it more expedient and more profitable, as the result of this interference, to divert their mills to other uses. In Canada, where the industry has been under investigation for over a year, the result has been to imperil our foreign market; to undermine confidence in the future of the industry to the extent of rendering it inexpedient to invest new capital in its expansion and develop-

HIGH GRADE COATED PAPER

For the Best Results in Fine Screen Half-Tone
and Color Work, use

"Red Seal" Coated Book

"Luxacoted Porcelain" Coated Book



Made by

RITCHIE & RAMSAY LIMITED, TORONTO
CANADA

Western Selling Agents :

JOHN MARTIN PAPER CO., LTD., Winnipeg and Calgary

THE POPULAR PAPER

Bell-Fast Bond & Bell-Fast Ledger Paper

Has Gained This Prestige By Comparison

ASK YOUR PRINTER TO GIVE YOU SAMPLES AND PRICES OF BELL-FAST
BOND & BELL-FAST LEDGER PAPER AND COMPARE WITH OTHER PAPERS

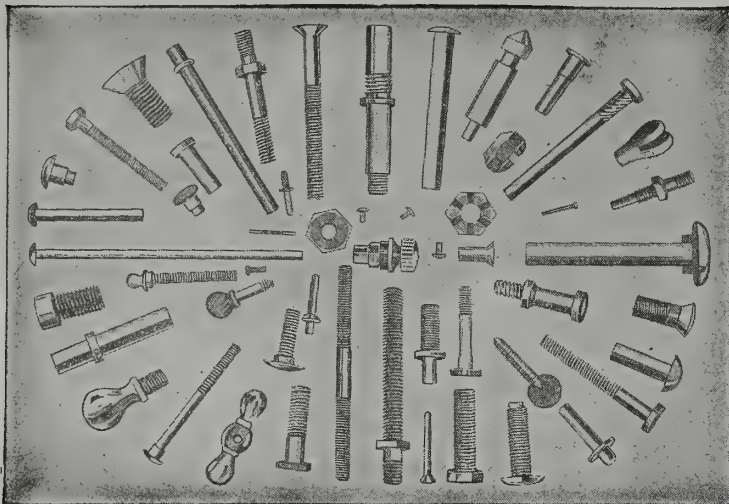
THIS WATERMARK



GUARANTEES QUALITY

We have an exceptional booklet proving the popularity of Bell-Fast Bond and
Bell-Fast Ledger Paper, a copy of which we will gladly send you on request.

Howard Smith Paper Mills, Limited, Montreal



Automatic Screw Machine Products

ACCURACY

QUALITY

Our Mechanical Engineers are at
the service of our Clients.

UNITED BRASS & LEAD Limited

284 ST. HELENS AVE. - - TORONTO

W. L. TOBIAS, Superintendent
(Formerly Superintendent National Cash Register Co.)

Orders by Telegraph

These Should Be Confirmed Promptly by Letter or
Mistakes May Be Made

Whenever a telegram is used, it should be, if possible, promptly confirmed by letter, says the *Typotheta Journal*. That, of course, is not always safe for the reason that the customer may accept on the telegram before he receives the letter. It is therefore better in making a contract to make it by letter or on the regular form.

Here is an interesting decision as to the danger of using a telegram in making a contract:

"The case is that of the National Bank of Powell against the Price Brokerage Co.

"The bank wired and offered to sell potatoes on certain terms. As delivered to the Telegraph Co. the telegram read: 'Can furnish one car clean white potatoes at one thirty-five per hundred f.o.b. Powell.'

"But, through a mistake in transmission of the telegram, when delivered to the plaintiff, it read: 'Can furnish one car clean white potatoes at once thirty-five per hundred f.o.b. Powell.'

"The customer immediately telegraphed 'Wire just received. We accept car, ship quick as possible.'

"The potatoes were shipped but the bill of lading was sent to a bank at St. Joseph with draft attached for the amount of the potatoes at \$1.35 per hundred. When the draft was presented, the customer wired the bank to reduce the draft to the amount due on basis of \$.35 per hundred. The bank replied stating its price was \$1.35 and notified the St. Joseph bank to hold the bill of lading until the full amount of the draft was paid.

"The Court held: 'When it (the bank) in the first place offered by telegraph to sell potatoes to the plaintiff, it made the Telegraph Co. its agent to convey that offer, and for any mistake the agent made in doing so the bank must suffer the loss incurred. The contract was made at \$.35 per hundred. The only thing remaining to be done was the payment of the contract price. It is true the seller thought the contract price was \$1.35, but unfortunately for the seller, that was a mistake so far as the purchaser was concerned.'

Among the building permits issued in Toronto recently is one for the erection of a stores depot for the Imperial Munitions Board on the Weston Road, near St. Clair Avenue, at an estimated cost of \$125,000. Another has been taken out by Imperial Oil, Limited, for a petroleum storage station on Keating St., to cost \$104,200.





YOU don't want loss of life to occur if you **SHOULD** have a fire, but is your building properly equipped to prevent it?

Let us estimate on your fire-escape needs. We do the biggest work in Canada—every job finished according to Government requirements.

We also make complete iron stairs, machine guards, window screens, steel lockers, shelving, material bins, etc.

FIRE ESCAPES

The Dennis Wire & Iron Works Company, Limited
LONDON - CANADA

DENNIS-LONDON



STAMPED METAL PARTS

Our modern equipment enables us to produce Sheet Metal Stampings in all metals at moderate prices. Prompt attention and good workmanship is given to each order.

Your inquiries are cordially solicited

CARON BROTHERS

CARON BUILDING

233-239 Bleury Street

MONTREAL

Nova Scotia Steel & Coal Co. LIMITED

PLATES

1/8 to 5/8" thick up to 48" wide, weighing up to 1,200 lbs. each

Fluid Compressed Steel Forgings

We manufacture Merchant Bars, Rounds, Flats, Squares, Ovals, Half Ovals, Tires, Sleigh Shoes, Plain or Twisted Concrete Bars, Agricultural Sections, Cold Drawn Shafting, Machinery Steel, Angle Bar Fish Plates, Track Spikes and Bolts.

General Sales Office :
WINDSOR HOTEL, MONTREAL

Head Office :
NEW GLASGOW, N.S.

Trade Enquiries

These enquiries come into our hands from various sources. The Weekly Bulletin of the Department of Trade and Commerce, from which the enquiries indicated in the sub-heading allotted to them are taken, should be read regularly by those interested in foreign trade. It will be sent free on application to the Department at Ottawa. The names connected with all those enquiries can be furnished direct from the Commercial Intelligence Department, Canadian Manufacturers Association, Toronto.

DOMESTIC TRADE ENQUIRIES

112. **Chains and Anchors.**—Shipbuilders in the Maritime Provinces are in the market for prompt deliveries on chains and anchors for marine purposes. We should be glad to put any manufacturers of these in prompt communication with shipbuilding firms requiring them.
113. **Steel Bins.**—A large company in Quebec would like to get in touch with Canadian firms able to supply them with steel bins for holding bolts, pipe fittings, etc., in a mill storehouse.
114. **Capital and Services.**—A Toronto man who has had considerable experience in salesmanship in paints, hardware and motor lines, is desirous of hearing from firms who require the services of an expert salesman who will supply some additional capital in a business with good prospects of success.
115. **Part-Time Work.**—We are in communication with a reputable man who desires to employ several hours per day, or four or five days a week in some sort of work calling for the exercise of sales or executive ability.
116. **Agency.**—A manufacturers' agent in British Columbia, offering local references, is desirous of getting agencies for motor accessories and other specialties for the territory covering the Okanagan Valley and Kootenay

District in British Columbia. In some cases he operates as a broker and purchases outright for cash to re-sell, carrying the credit risks himself.

EXPORT TRADE ENQUIRIES

117. **Catalogues, Etc.**—A commercial museum in Italy would like to have catalogues of Canadian manufacturers on hand with a view to assisting in the development of trade between Canada and Italy.
118. **Agency.**—A civil and electrical engineer, who states that he has extensive connections in Belgium, desires to get in touch with manufacturers of agricultural implements, not represented there, who are considering Belgium as an export market after the war. In the meantime he is desirous of working for the manufacturers in some capacity which will enable him to know their products fully.
119. **Agency.**—A commission merchant of Mexico is interested in getting in touch with some Canadian exporters of the following lines:—Hats, Shoes, Furs and Automobile Supplies.
120. **Agency.**—A business man in British Columbia, who has had considerable selling experience in Canada, is desirous of forming a business connection with Canadian firms who are contemplating Japan as an export market. He knows sufficient Japanese to form the basis of a speedy acquirement of the language.
121. **Agency.**—A Toronto man with considerable Canadian selling experience and several years in export markets, would like to hear from a number of Canadian manufacturers, chiefly those producing cut glass and china, silverware, cutlery, brass goods and dry goods, who are interested in developing the markets in Central America, West Indies, Jamaica and Cuba.

THE CANADIAN APPRAISAL COMPANY LIMITED

IN designing our Appraisal Service we endeavor to meet the fullest accounting, operating, insurance, and financial requirements of our clients, so that the appraisal values may furnish a sound and provable basis for the plant accounting system, the scientific placing of insurance and prompt collection of fire losses, or any other feature of a business where disinterested plant valuations are involved.


Correspondence Invited.

Head Office, 17 St. John St.
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Toronto
Royal Bank Bldg.

New York
Equitable Bldg.

STEEL AND IRON

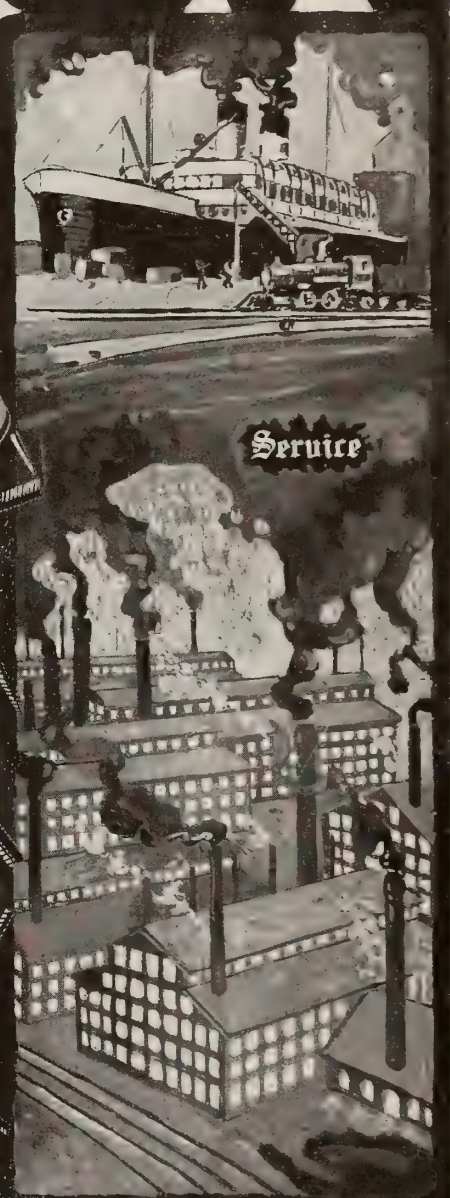
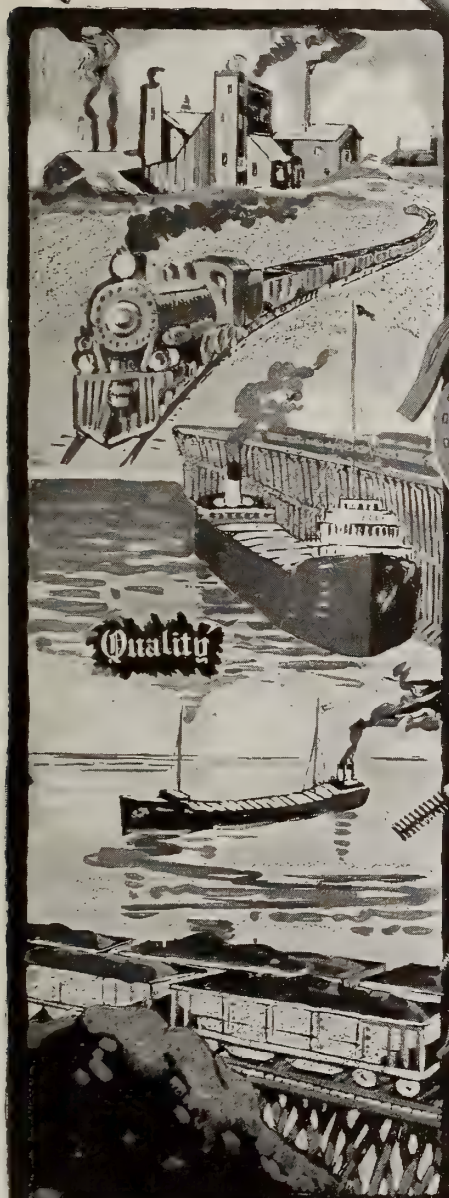


PRODUCTS

OF EVERY DESCRIPTION
FROM ORE
MINES TO
EXPORT

THE
STEEL
COMPANY
OF
CANADA
LIMITED

HAMILTON MONTREAL



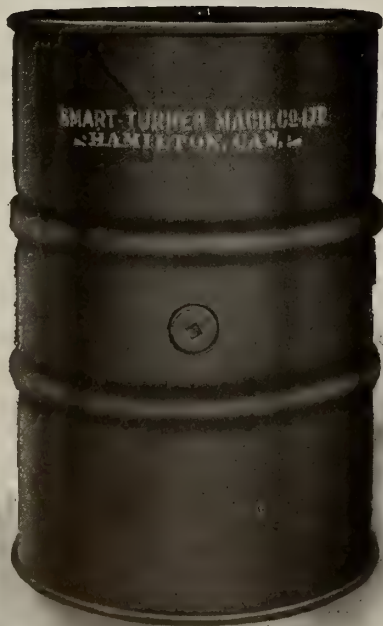
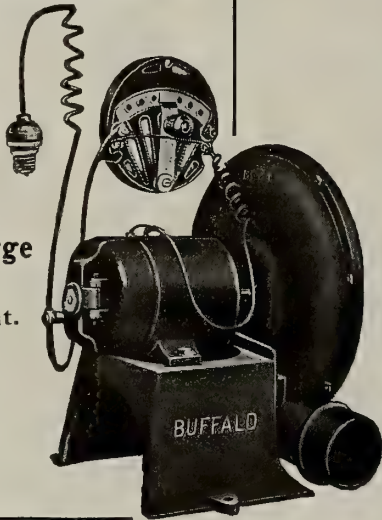
"Buffalo"

A dozen of these little fellows ought to be in every shop in Canada.

For blowing forge fires, exhausting gases and fumes, dust from small grinders and buffing machines, blowing scale for power hammers and chips and sawdust from wood working machinery.

Ask for literature—write Dept. 14.

**Canadian
Blower & Forge
Co.
Kitchener, Ont.**



Use the Up-to-date Packages Which Do Not Leak
Smart-Turner Steel Barrels

Send for Your Copy of Catalogue

**The Smart-Turner Machine Co., Limited
Hamilton, Canada**

122. **Small Tools.**—We have an enquiry from a large firm in Bristol who wish to get catalogues, price lists, and full particulars from manufacturers of small tools.
123. **South Africa.**—A merchandise broker is interested in importing into South Africa, Canadian flour and other foodstuffs.
124. **Sole Agency.**—A firm of manufacturers' representatives in New Zealand are desirous of hearing from Canadian manufacturers of glass bottles and jars, strawboards, leatherboards, and various kinds of paper, who will consider the appointment of selling agents for New Zealand.
125. **Engineering Work.**—We are in receipt of a letter from a well-recommended engineering firm in London, England, who desire to operate on a commission basis, acting as sole representatives for one or two important Canadian firms in engineering or allied lines.

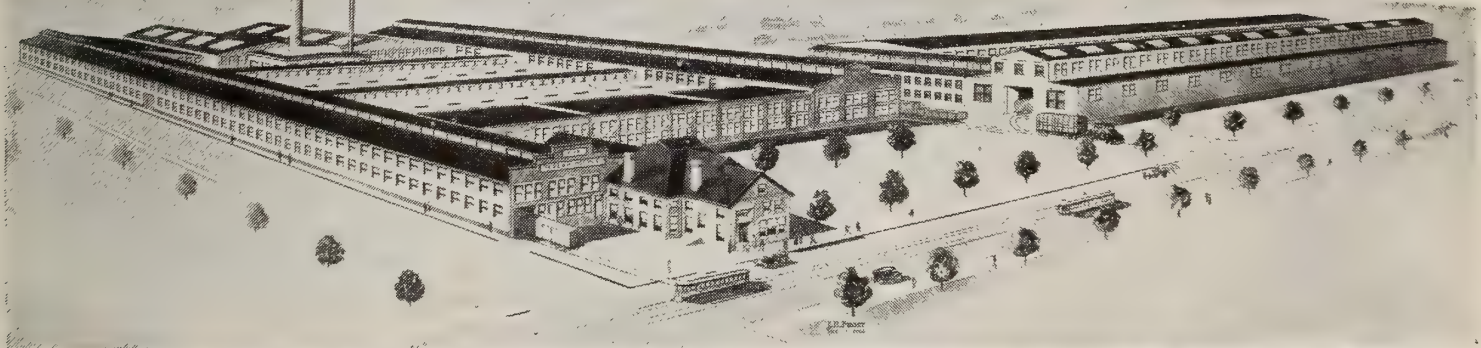
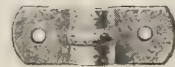
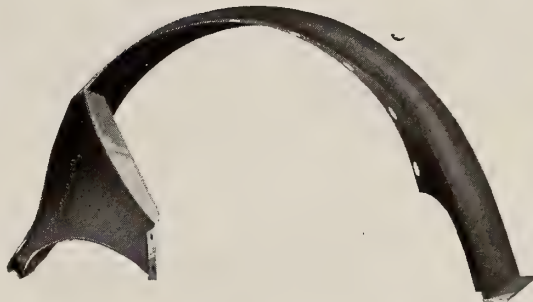
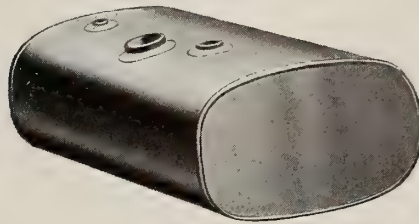
EXPORT TRADE ENQUIRIES TAKEN FROM THE WEEKLY BULLETIN OF THE DEPARTMENT OF TRADE AND COMMERCE

126. **Dairy Appliances and Agricultural Implements.**—A London, England, agent, wishes to arrange with Canadian manufacturers for the agency for dairy appliances, such as milk separators, etc., and agricultural implements, particularly agricultural hand implements, such as hand hoes, for business after the war.
127. **Hosiery and Haberdashery.**—A dry goods firm in St. Kitts, British West Indies, makes inquiry for Canadian hosiery and haberdashery.
128. **Enamelled Goods.**—A large firm in St. Kitts, British West Indies, would like to receive quotations from Canadian manufacturers of enamelled goods.
129. **Farm Specialties.**—A South African commission house, accustomed to specializing in requirements for farm purposes, are prepared to consider agency offers from Canadian manufacturers.
130. **Representation in Italy.**—An importing company in Italy which has now very large contracts with the British forces in Italy, wish to make arrangements for the representation of Canadian manufacturers in Italy after the war. They wish to enter into correspondence with Canadian manufacturers wholly with a view to after-the-war business.
131. **Iron and Steel Rope and Wire.**—Firm at Genoa are desirous of buying for own account iron and steel rope and wire.
132. **Carpets, Tapestries, Chintzes, Etc.**—Furniture dealer at Palermo wishes to import carpets, tapestries, chintzes, furniture, fancy goods, ornamental clocks, porcelain, earthenware, glassware, etc.
133. **Hardware, Colors, Varnishes, Etc.**—Agencies are desired by a Florence merchant for hardware, colors, varnishes, chemicals, soaps, essential oils, perfumery.
134. **Paint Brush Handles.**—A Glasgow firm of brush manufacturers, who have been obtaining supplies of the above from the United States, asks for Canadian sources of supply.
135. **White Powdered Arsenic.**—A Glasgow firm would like to hear from exporters of the above.
136. **Catalogues of Various Products.**—A Port Elizabeth wholesale firm requests price lists and catalogues on any line of goods suitable for wholesale jobbers, mentioning in a special way hardware and iron and steel goods of all kinds, brushware, woodenware, furniture (knocked down), carriage and wagon parts, foodstuffs, folding chairs, organs, and lumber for shelving.

SPECIALISTS IN SHEET METAL STAMPINGS

Equipment— plus Experience

Many difficulties are encountered in stamped and deep-drawn metal work—difficulties that can be successfully overcome only by the skill born of experience. Our staff are accustomed to handling work of every description. They can successfully produce the most complicated work, and their skill is backed by the most modern equipment. If you require ANYTHING in Sheet Metal Stamping or Deep-drawn Metal work, let us figure on it.



THE PEDLAR PEOPLE LIMITED

Manufacturers of

PEDLAR'S "PERFECT" SHEET METAL PRODUCTS

OSHAWA

Among the Industries

Under this heading are published items of news of current interest concerning the activities of Canadian manufactures. Information about changes of interest, enlargement of plants, and plans for future developments are always welcome, and are published free of charge, provided they should not be properly classified as advertisements

*Items prefixed with an asterisk are based on official information received in each case from the companies mentioned. Other items, while secured usually from reliable sources, have not the same authoritative origin.

ALBERTA.

Edmonton.

Plans have been drawn for a \$3,000 concrete warehouse to be erected this spring by the Dominion Bottling Works, 10172 94th Street.

Lethbridge.

P. Burns & Co., Third Ave. S., contemplate the erection of a \$20,000 abattoir.

Calgary.

Plans are being prepared for superstructure of mill for Alberta Flour Mills, Ltd., 816 1st St. W.

BRITISH COLUMBIA.

New Westminster.

Mayor Gray, of New Westminster, has succeeded in obtaining the consent of the Imperial Munitions Board (Wooden Shipbuilding Department) for the installation at New Westminster of boilers, engines and other fittings for the four wooden ships being built at New Westminster, the first one of which was launched April 7th. It is possible that the same policy of fitting out the steamers at the point where they are built will be followed in connection with the wooden ships now under construction and nearing completion at Vancouver, North Vancouver and Coquitlam, with a view to relieving the congestion of the main fitting out plant at Victoria and assuring an earlier date of delivery of the steamers for service.

Arrangements have been completed for the construction of a steel plant at New Westminster, B.C., with a capacity of 50 tons per day. Electric furnaces will be used in the conversion of the scrap used in this plant. It is expected that work on the construction of the plant will commence about the 15th of May.

The New Westminster Construction & Engineering Company will erect an assembly plant at the foot of 10th Street.

North Vancouver.

The Lyall Shipbuilding Yards, North Vancouver, are proceeding with the construction of six wooden schooners for their own account. It is understood that the Lyall Company propose to operate these steamers themselves for general cargo service on the Pacific.

The Wallace Shipbuilding Company, of North Vancouver, have under construction an addition to their plant in the shape of a large structure to be used in the housing of plates and moldings for steel ships for which they were recently given a contract by the Dominion Government. The value of this addition to their plant is placed at \$75,000.

South Vancouver.

The Vancouver Cooperage Co. are having plans prepared for a cooperage factory.

Vancouver.

The Allan & McKelvie Iron Works, Limited, of Vancouver, put into operation on April 16th a new galvanizing plant.

This plant has a capacity of about six tons per day and is capable of handling pieces about nine feet long.

A contract has been let to the Taylor Engineering Company of Vancouver, for the construction of a floating dry dock for Vancouver harbor. The new dock is estimated to cost \$750,000, and will be 352 feet in length over all and 100 feet wide over all with a lifting power of 4,500 tons and capable of taking a vessel of 20-feet draft.

A permit has been issued to the Canadian Fishing Company, for the erection of a new cannery. Building, \$35,000. Plant, \$65,000.

Victoria.

The Canadian Steel Corporation has been licensed as an extra-provincial company in British Columbia. The corporation's head office for the province is in Victoria. Their Dominion headquarters are at Ojibway, Ont.

NEW BRUNSWICK.

St. John.

Within the next few weeks the McAvity machine plant on the Marsh Road, will have another unit of 100 x 400 feet added to its present building. It will be constructed of reinforced concrete and brick and will be placed immediately in the rear of the present plant. Grant & Horne, contractors, who erected the first unit of similar size, in 1916, in nine weeks, have been awarded the contract for the new building. The addition will be used as a moulding shop. It will mean a large number of additional employees.

The Thompson Manufacturing Company, Grand Bay, have recently added another building to their plant.

The Canada Nail and Wire Company have extensions for their plant at West St. John, under consideration.

T. McAvity & Sons, Ltd., 13 King St., are having plans prepared for an addition to their plant. Estimated cost, \$500,000.

The St. John Shipbuilding Co. contemplate the erection of a shipbuilding plant.

NOVA SCOTIA.

Halifax.

Plans are being prepared for a modern shipbuilding plant, including a floating dry dock of concrete or steel. J. W. Norcross, R. M. Wolvin and A. Shearer, of Montreal, are preparing plans.

The Halifax Vulcanizing Works, 52 Argyle Street, contemplate the erection of a vulcanizing plant on Grafton Street.

North Sydney.

A curing plant for the Leonard Fisheries, Limited, is to be erected here.

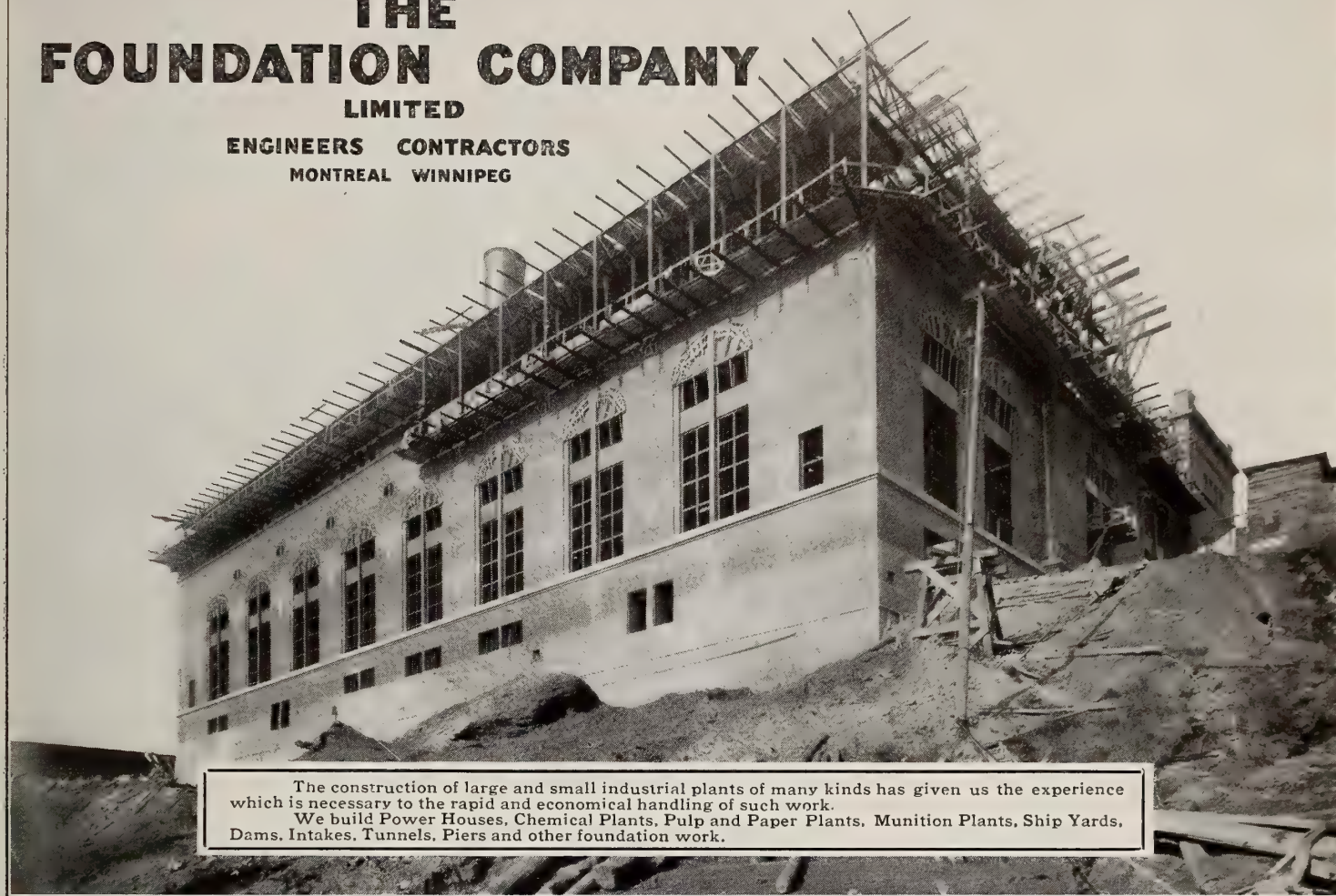
Sydney.

The Cape Breton Shipbuilding Company, Ltd., has recently been incorporated, and has secured a shipyard at Johnstown, in Richmond County. The enterprise is promoted by local men.

Rhodes, Curry & Co., Ltd., Wentworth St., will make alterations costing \$5,000 to their factory.

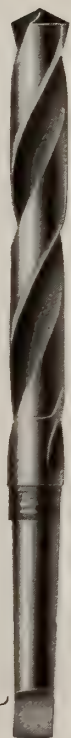
THE FOUNDATION COMPANY LIMITED

ENGINEERS CONTRACTORS
MONTREAL WINNIPEG



The construction of large and small industrial plants of many kinds has given us the experience which is necessary to the rapid and economical handling of such work.
We build Power Houses, Chemical Plants, Pulp and Paper Plants, Munition Plants, Ship Yards, Dams, Intakes, Tunnels, Piers and other foundation work.

Re Twist Drills
and Reamers
High Speed and
Carbon



Set Screws
Cap Screws
Semi-Finished
Nuts delivered
from stock

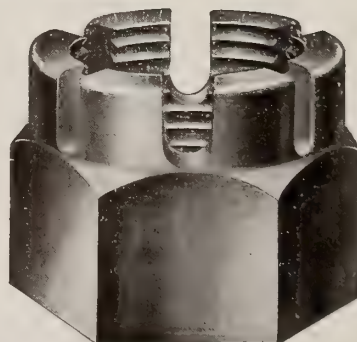
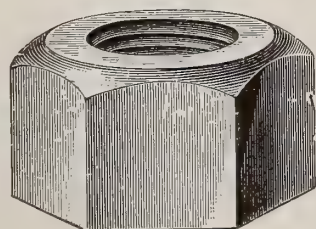
We have recently added to our equipment at Plant No. 3, where these tools are manufactured, and in the near future expect to be able to give prompt deliveries. In the meantime would appreciate it if our customers would anticipate their requirements as much as possible by placing orders with us well in advance of their actual needs.

Always, when wanting good drills, use "Morrow's."

John Morrow Screw and Nut Co.

Limited

INGERSOLL, CANADA



ONTARIO.

Arnprior.

The plant of S. R. Rudd & Co., planing mill and furniture factory, has been destroyed by fire at an estimated loss of \$25,000. The company will rebuild on a large scale.

The Arnprior Cabinet Co. are now in their large new factory, which is in running order. They are searching for experienced cabinet-makers, and it is expected that the factory will soon be running full capacity. The company will manufacture various lines of office furniture.

Brantford.

A \$15,000 factory addition is being made by the Waddell Preserving Co.

Chesley.

Fire which started from the explosion of a pot of rosin wiped out the entire munition plant of the Canada Beds, Ltd., destroying the machine shop and the power house, together with thousands of shells in various stages of manufacture. There is a suspicion that alien enemies were responsible for the fire, and an investigation has already begun.

Cornwall.

A \$25,000 addition is being made to the mill of the Toronto Paper Mfg. Co. The addition will form a finishing room and will be completed by the summer.

Forest.

Howard Fraleigh is having plans prepared for a \$5,000 addition to his flax mill.

Glanworth.

The Canadian Milk Products, Ltd., 10 St. Patrick Street, Toronto, are remodelling their building.

Goderich.

Negotiations are under way for the building here of a large new shipbuilding plant for the National Shipbuilding Company. Mr. Hutchison, of the company, is in charge.

Hamilton.

Harry M. Marsh, for the past six years Commissioner of Industries and Publicity for the city of Hamilton, resigned that office on April 1st. C. W. Kirkpatrick, well-known newspaper man, was appointed by the city council to the position and assumed his duties on April 15th.

The Dominion Steel Foundry Company have had plans prepared for the erection and equipment of a new plant to fill American forging orders to the value of \$2,500,000. Work will begin at once.

A \$20,000 brick addition is to be made to the factory of Wagstaffs, Ltd., jam manufacturers.

The National Steel Car, Hamilton, has completed shipping 1,000 cars for the Canadian Government railways. This will be followed up with 200 cars for the Bengal and Nagpur Railway, India. It is expected that another thousand cars will be completed for the Canadian Government railways. Twelve locomotives are in the process of construction for the Hydro-Electric.

Kitchener.

A \$12,000 factory is being erected by George Schler, 30 Edward Street.

London.

Tenders have been called for the erection of a \$20,000 factory for W. A. Jenkins Co., manufacturers of animal and poultry food.

Mr. Manufacturer:

**RAPID AND ECONOMICAL ERECTION OF
THAT NEW BUILDING IS WHAT YOU WANT**

John V. Gray Construction Co., Limited
General Contractors

"REAL SERVICE"

625 Confederation Life Bldg., Toronto

In What State are Your Cement Floors and Walls ?

They would be for all time Dustproof, Wearproof and Waterproof if treated with LAPIDOLITH before they become cracked and full of holes.

STEAM BOILERS, SPRING REPAIRS AND RENEWALS—Up-to-date Engineers are doing these with their own help by using our PLIBRICO JOINTLESS FIREBRICK AND PLIBRICO BOND High Temperature Cement. It will mean lower Coal Bills next winter. Also used in nosing furnaces of Ammunition Plants, Dutch Ovens, Retorts, Forges, Smelters, Saw Mill, Burners, etc.

Mill Supply Dept. BEVERIDGE PAPER CO., Limited, Montreal
STOCKS CARRIED FROM COAST TO COAST

Truscon Steel Sash

The Demand of Business

—The Answer

BIGGER production and increased demands require top-notch efficiency in man and machine. Truscon Steel Sash is the solution to daylight and ventilation problems. Flooded with daylight, more and better work can be done, and accidents prevented. Proper ventilation assures healthful working conditions—the free exit of fumes as well as influx of pure air.

Built for Permanence

THE high-grade workmanship of Truscon Steel Sash is noticeable in its clean-cut lines and attractive appearance. Made of specially rolled high-grade steel, the sections are fitted with mathematical exactness. The size and design of the solid steel sections assure tremendous strength and rigidity against wind pressure or suction from air currents. The sash is given rigid inspection both during the process of manufacture and before shipment.

An Engineering Service Department

AN expert engineering service has always been maintained for Truscon Building Products. The advice and recommendations of this department have helped to build up the enviable reputation which these products enjoy. Truscon Steel Sash, as one of these products, is backed by this service which comprises estimates, designs and advice regarding daylighting and ventilation.

Truscon representatives located conveniently throughout Canada, will give personal service to owners, architects, engineers and contractors, as well as co-operate with them fully.



Trussed Concrete Steel Co.

of Canada, Limited

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STRUCTURAL STEEL and BRIDGE BUILDERS



We build and erect all kinds of Structural Steel, Bridges, Roof Trusses, Bank and Office Railings, Stair Work, Elevator Grills, Fire Escapes, etc.

Over 5,000 Tons in Stock of
Beams, Column Sections, Angles, Tees, Plates, Bars,
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We Do Contract Work

Machine Shop, Blacksmith Shop,
Wood Pattern, Sheet Metal, Planing
Mill, Grey Iron Castings.

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48 ABELL STREET
TORONTO



GEARS

Spur
Worm
Spiral

or Gear Cutting
from your blanks.

Hamilton Motor Works, Limited
HAMILTON, CANADA

Niagara Falls.

Kinzinger, Bruce & Co., Limited, manufacturers of automobile accessories, bathroom fixtures and electric fixture parts, announce that they have lately started manufacturing automobile jacks.

Orillia.

The E. Long Mfg. Co., makers of saw and shingle mill machinery and shafting, contemplate the erection of a two-story addition.

Ottawa.

The British-American Nickel Refining Company, which has been negotiating for property on which to erect a refining plant, for some time, has decided to locate on the Hull side of the Ottawa river. It is said that the company have purchased the property known as the old Conroy piling grounds at Deschenes, upon which a nickel refinery, to cost in the neighborhood of \$1,000,000, will be erected. Construction work is to start shortly.

Port Arthur.

J. Stirrett & Sons contemplate the erection of a sawmill.

St. Catharines.

Tenders have been called for a \$50,000 two-story concrete and brick factory for the St. Catharines Silk Mills, Limited.

A \$45,000 two-story brick addition is being made to the factory of the McKinnon Sash & Hardware Co.

Sarnia.

Fire completely destroyed the flax mill of the Lindsay Thompson Flax Company. Loss, \$10,000.

Thorold.

A \$50,000 addition is to be made to the factory of the Beaver Board Co.

Toronto.

Tenders are expected to be called shortly for the first unit superstructure for factory at Don River and Ashbridge's Bay for W. Harris & Co., 994 Danforth Ave.

Tenders for the construction of a bakery for the Ideal Bread Co., Ltd., 183 Dovercourt Road, will be called shortly. Architect, Sydney Comber, 213-511 St. Catherine St. West, Montreal.

The Galena Signal Oil Co., 130 Royce Ave., intend to rebuild their plant at once, which was recently destroyed by fire.

The Interurban Engineering Co., Ltd., are erecting a one-story brick machine shop on Vine Street.

A structural shop is being erected by Reid & Brown, Esplanade East.

Fire damaged the Harris Abattoir Company's buildings on St. Clair Avenue on April 15th. Estimated damage to plant and buildings, \$250,000.

Permit has been issued to the British Forgings, Limited, Ashbridge's area, for addition to forge shop. Cost, \$80,000.

The Chapman Double Ball Bearing Company, Limited, 347 Sorauren Ave., will erect a \$4,500 one-story brick addition to their factory.

The Harris Abattoir Company, St. Clair West, are erecting a \$15,000 three-story concrete and brick addition to their tank house.

Wallaceburg.

The Dominion Glass Co., head office, Toronto, contemplate the erection of a \$200,000 producer gas plant.

The Volta Mfg. Co. will build an addition to its plant here. The extension will be 50 feet by 50 feet, of brick construction, and will be used as a machine shop. The company manufactures electric hoists and electric furnace controllers.



Are you carrying enough fire insurance on your buildings to replace them under present conditions in case of loss?



Do not simply add a percentage arrived at by guess. Employ us to estimate the cost of reproducing your buildings. We have experience on building all kinds of buildings under existing conditions and can give you accurate estimates at a very moderate cost.



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COMBINATION LINK-BELT

"C" Class

for Elevating and Conveying

STRENGTH and low cost are combined in "C" Class Link-Belt. It is well established as a durable Link-Belt for elevating and conveying.



Length of life in service is increased by preventing motion between the pin and the side bars which hold it. The joints are accurately fitted to the side bars. A flat portion is milled accurately at the end of the pin, fitting into a carefully broached hole in the side bar. Obviously, this construction is superior to forged lugs or necks under the head to hold the pin in place.



"C" Class Link-Belt is preferred because of:

- 1—The pin construction.
- 2—High tensile strength in pins and side bars.
- 3—Cast centre links are made of the best grade of malleable iron for durability and strength.
- 4—The pin holes in the heads of the links are cored smooth and clean. A durable joint results.
- 5—Accurate pitch and small clearances are assured by accurately made patterns and dies.
- 6—Close-fitting joints keep out gritty material, and lengthen the life of the Link-Belt.

Write for Folder No. 306, which gives particulars regarding "C" Class Link Belt. Our experienced engineers offer their services in solving your problems in elevating, conveying and power transmission.

CANADIAN LINK-BELT CO., LTD.

Manufacturing Plant and Offices at
265 WEST WELLINGTON ST.
TORONTO

QUEBEC.

Aylmer.

The British American Nickel Corporation, Dominion Bank Bldg., Toronto, have secured a site on which they intend to erect a nickel refinery. General manager, E. P. Mathewson.

Beauharnois.

Plans and specifications are with the architect, G. A. Monette, 83 Craig St. W., who is receiving tenders for the erection of a factory for the Independent Silk Co., Ltd., 52 Nazareth St., Montreal.

Hull.

The Hull Iron and Steel Works are planning to erect a machine shop.

Lachine.

The erection of a manufacturing plant is contemplated by Crane Company, 836 North Michigan Ave., Chicago. Architect and engineer, William J. Clarke, care of owners.

Montreal.

S. M. Roberts, vice-president and manager for Quebec of the Merchants Casualty Co., has become president and manager of the Grain Growers Auto Tractor Co., which will engage in the manufacture of tractors in Canada. Mr. Roberts remains vice-president of the Casualty Co., but has resigned its management.

Lamontagne, Limited, 338 Notre Dame St. W., contemplate the erection of a five-story factory. General manager, P. E. Joubert.

Alterations costing \$7,500 are being made to the factory of the R. T. Godfrey Estate, 215 Drummond St.

An extension is being made to the foundry of the Montreal Locomotive Works.

A \$26,000 factory is being erected by the Canada Casings Co., Ltd., 750 St. Paul St. W.

The Wilson Machine Co., 151 Prince St., are erecting a two-story brick factory at a cost of \$8,000.

Two kilns costing \$14,800 are to be erected by the Montreal Pottery, Limited.

The firm of Fred Thompson Co., Ltd., has recently constructed a new three-story and basement brick building to take care of their increasing business. This firm is manufacturing all kinds of electrical supplies; the new location is at 9 St. Genevieve St., Montreal.

Pointe aux Trembles.

Tenders will be called about the middle of May for the erection of an office and factory building, costing \$20,000, for the Home Cigar Company, Ltd.

Seven Falls.

A ferro-silicon plant, costing \$300,000, is to be erected by the Laurentian Power Co.

Shawinigan Falls.

The Shawinigan Water and Power Company contemplate the extension of their carbide and electrode plants.

Victoriaville.

By-law granting \$12,000 for the erection of an extension to plant of the Victoria Toy Mfg. Co., Debigare St., has been passed, and work will be commenced at once.

SASKATCHEWAN.

Estevan.

An arrangement has been entered into between the Federal Government, the Province of Manitoba and the Province of Saskatchewan, whereby a plant for the manufacture of anthracite briquettes from prairie lignite coal will be established in the Estevan district in Saskatchewan. The plant will cost \$400,000. The Federal Government has charge of the erection of the plant. It is expected to be in operation by next winter.

Announcement

NOW MADE IN CANADA

COPPER

HOT AND COLD ROLLED

SHEETS—ROLLS

STRIPS—PLATES

ANODES

BUS BAR

RODS

Made in any width up to 66 inches, in all tempers for roofing, blanking, deep drawing, spinning. Accurate to gauge and highly finished.

PROMPT DELIVERIES

Brown's Copper & Brass Rolling
Mills, Limited

NEW TORONTO (Near Toronto)

Catalogues and Booklets

BARRETT'S NOX-AER-LEEK

A small booklet describing the advantages of Barrett's Nox-Aer-Leek has been issued by the Erickson Company, New York. Nox-Aer-Leek is a plastic cement composed of elastic bitumen fused with non-drying oils and asbestos fibre and its purpose is to stop the leaks in boiler settings. As every brick boiler-setting is more or less leaky, it follows that Nox-Aer-Leek will have a use in practically every plant where such installations exist.

A NEW ELECTRIC SOLDERING TOOL

The Clemens Electrical Corporation of Canada at Hamilton, Ont., have placed on the market a new electric soldering tool, which revolutionizes the method of soldering. This remarkable tool, which is made in several styles, has under authentic tests saved from 40% to 70% time that was taken to do the work previously. This seems a remarkable statement, but it is borne out by facts. In the shops of the Robinson Elect. Construction Company, this soldering tool in doing work of 50 H.P. motor stator coils in 1½ hours that previous to the use of this tool took 5 hours. This is only one instance.

The secret of the efficiency of this remarkable iron is that it heats only while in contact with the work, and then heats almost instantaneously. These tools give continuous conducted heat and give it faster than it can be taken away by the metal on which it is used. They have overcome the many disadvantages found in the old style electric iron, or gas iron. They have been developed and perfected after care-

ful study and extensive tests in a wide variety of industrial plants.

With the J. C. tools there is no loss of time—no waste of current—no interruption of work. They develop a direct heat (approximately 3300 degrees centigrade). One of its many advantages is its lightness and simplicity. They do not require skilled help. They can't burn out, and the only parts that require to be renewed are the carbon contacts.

A most elaborate booklet describing the "J. C." electrical soldering tools has been issued by the Clemens Electrical Corporation of Canada, which it would well repay manufacturers using soldering irons to secure and examine. It illustrates and sets forth the merits of the apparatus most completely.

TYPE "HS" INDUCTION MOTORS

A descriptive leaflet dealing with type "HS" induction motors has been issued by the Canadian Westinghouse Co., Limited. The company prefaces its detailed account of the chief features of the motor, with the following general remarks: "In developing this line of motors, it has been the aim of the Westinghouse Company to build motors that will give continuous successful operation. In general the type "HS" motors are an entirely new line. No sacrifice in either mechanical or electrical construction has been made to adapt the parts to obsolete designs. They have been subjected to rigorous tests to demonstrate their reliability, both mechanically and electrically. These tests have demonstrated conclusively that type "HS" motors have a better all-round performance than any other induction motor on the market. They have incorporated in their design many new features tending to give reliability in service."

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Offices—Toronto General Trusts Building
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TORONTO
Canada

ARE YOUR STEAM PIPES INSULATED?

IF NOT YOU ARE BURNING MONEY

A GOOD COVERING pays for itself in one Season, and is a revenue producer indefinitely. The Best is the Cheapest WE HAVE IT

EUREKA MINERAL WOOL & ASBESTOS COMPANY

118 ADELAIDE STREET WEST, TORONTO, ONTARIO

**FOR
HIGH
SPEED**



**FOR
HEAVY
PRESSURE**

For Cool Bearings

WHEN YOU PURCHASE

ARCTIC METAL

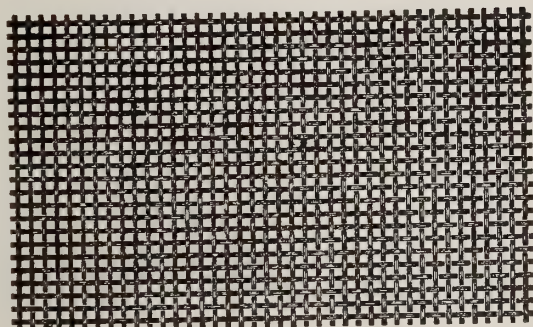
You get a product of long experience and 100 per cent. value

Manufactured and Guaranteed by

Tallman Brass & Metal Co.
HAMILTON, ONT.

GREENING'S

Wire Cloth



Wire Screening

All grades of Wire Cloth, Double Crimped.

Screening Accuracy Guaranteed.
Made of Steel, Copper or Brass.
Galvanized and Tinned Cloth.

Perforated Metals

Wire Rope

MANUFACTURED BY

THE B. GREENING WIRE CO., Limited
HAMILTON, ONT. : : MONTREAL, QUE.

A NEW HOUSE ORGAN

A unique production is the *Digester*, the house organ recently launched by the Laurentide Co., Grand Mere, P.Q. Its most conspicuous feature is the mingling of French and English in its composition. Indeed, one of the contributions in the issue of April 17 is a medley of both languages. The fact that a large number of the employees are French-Canadians naturally makes it of service to use the French language.

So far as contents are concerned, there is variety. Not only are mill happenings recorded, but there is a certain amount of municipal news and general information and a number of illustrations. The *Digester* will be published every other week.

A BUSINESS SURVEY

Canada.—A New Market. As revealed through facts and figures gathered and compiled by the Curtis Company, Limited, Windsor, Ontario.

This is an admirable summing-up of business conditions in Canada at the present time and an excellent antidote to much of the pessimistic talk that is going the rounds just now. As the compiler points out at the outset, very few Canadians realize just how far this country has advanced in the past four years. That there is great prosperity and tremendous activity in business is generally understood but how impressive and substantial has been Canada's growth is not so fully appreciated. The pamphlet describes the evolution of Canada from pre-war days down to the present time, lays particular stress on the way in which war loans have been

supported, illustrates the prosperity of the country with statistics of trade and a reference to the remarkable increase in the number of automobiles in use and makes a strong case for the contention that in Canada there now exists a new field for the distribution of saleable articles.

The Curtis Company, who send out the pamphlet, are writers, illustrators, and printers of business literature, but there is no reference to their own activities in the work. It is a clear-cut statement of those Canadian developments which should put heart into every manufacturer and business man in the country.

THE PULP AND PAPER INDUSTRY

Some Side-lights of a Great Canadian Industry. Published by the Canadian Pulp & Paper Association, Montreal

In view of the hostility shown in certain quarters to the pulp and paper industry in Canada, a hostility which has resulted in a restriction of operations, it is a move in the right direction for the manufacturers concerned to set forth in pamphlet form the importance of the industry and how serious a matter it is to interfere with its natural expansion. In this booklet, recently issued, there is contained a number of the addresses delivered at the annual meeting of the Canadian Pulp & Paper Association, together with several charts illustrating the growth of the industry and an historical review tracing the progress of the industry down to the present time. These contents are by no means dry reading and anyone interested in manufacturing in Canada will find plenty to interest him in its pages.

PEDLAR'S "PERFECT" VENTILATORS

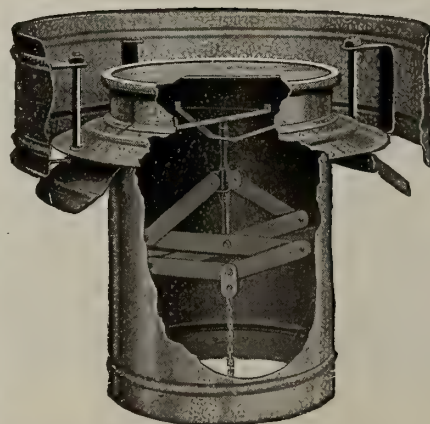
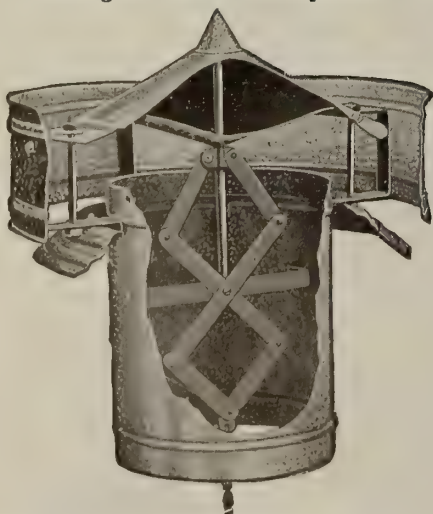
Good Air Promotes Good Work

Your employees will give you better service when you provide them with plenty of pure air. They will do it automatically, for no human being can do his best work if his vital powers are reduced through breathing a vitiated atmosphere. Pedlar's "Perfect" Ventilators are

a good investment for this reason especially during the close days of summer.

Pedlar's "Perfect" Ventilators are adapted to all building conditions. They are absolutely weatherproof, and, as there is nothing in their construction to wear, break or decay, they cannot get out of order.

Made in 13 sizes from 8 to 72 inches in diameter, metal or glass top. Write for Ventilator Booklet.



The Pedlar People Limited

Established 1861

Executive Offices and Factories :

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Branches : Montreal, Ottawa, London, Winnipeg, Vancouver



QUALITY FIRST

GALT KNIFE CO., LIMITED

GALT - - - ONTARIO

MADE-IN-CANADA

Toronto, Ontario

Mr. Manufacturer:—

Are you sincere in your desire to boost and make greater the British Empire by the buying of Canadian made goods? If so, look over the following list of high-grade oils, greases, compounds and paints manufactured in our oil refinery at Petrolia and our paint works at Toronto, Ontario. A postal card from you will bring you full information regarding the goods in which you are interested.

CYLINDER OIL

ENGINE OIL

MACHINE OIL

DYNAMO OIL

TANNER'S OIL

BLACK

LEATHER OIL

PARAFFINE

WAX

MINERAL

SOAP STOCK

BENZINE



WHITE LEAD

READY MIXED
PAINTCOLORS IN
OIL

VARNISHES

BLACK
JAPANSSTEEL BRIDGE
PAINTSROOFING
PAINTS

CUP GREASE

LINSEED OIL
SOAP

PETERBOROUGH ONTARIO, CANADA



The Manufacturer in Peterborough has many advantages. He connects directly with the G.T.R. and C.P.R., and by canal with all principal Waterways. He has abundant cheap electricity. He draws for his labor from a population of 24,000 industrious, home-loving people. Peterborough is the town worth living in, having all City advantages with fine country surrounding, excellent educational facilities and very moderate living expense.

FINEST LOCATION IN CANADA FOR
MANUFACTURERS

Hydro-Electric power is developed on the Otonabee River, and connecting Waters, by a system owned by the City, and rates are low. Peterborough has been notably free from labor troubles, and our Manufacturers have had no trouble in procuring labor of all classes. Labor costs less than in the larger Cities.

CENTRE OF POPULATION
EXCELLENT TRANSPORTATION FACILITIES

If Transportation charges are an important part of your manufacturing problem, Peterborough will interest you. It has direct railway connection with all big Centres, being situated between Montreal and Toronto.

There are over 60 factories, the largest employing about 2,000 hands. It is the civic policy to encourage manufacturers, and the city is reserving for new comers a number of very desirable manufacturing sites. For further particulars, write, wire or telephone—

THE CITY CLERK, Peterborough, Ontario, Canada

Chemical Fire Engines

For Factory—Village—City. Capacities 20, 40, 50, 70 Gal.

OUR "JUNIOR" 40 GAL. ENGINE WITH MANY IMPROVEMENTS OVER THE ORDINARY TYPE, SELLS AT \$150.00

The R. S. BICKLE COMPANY

WINNIPEG MONTREAL QUEBEC

ADDRESS ENQUIRIES TO HEAD OFFICE, WOODSTOCK

EXPORTERS OF

Reed Organs, Piano Stools,
Music Cabinets.

Catalogue B.



The Goderich Organ Co.
GODERICH, CANADA Limited



Closet Seats,

Flush Tanks,

Medicine Cabinets,

Everything for the Bathroom.

Write for Catalogue C and Price List.

A Steel Industry for British Columbia*

The Province Has the Ore; It is of Exceptionally Good Quality and there is a Market for Steel that Warrants a Start Being Made in Its Manufacture, Both for Provincial and National Reasons

By HON. WILLIAM SLOAN

Minister of Mines for British Columbia

WITHIN the past few months we have heard much of the possibilities of the iron and steel industry in Western Canada. Every public body almost, every mining engineer, and every person interested in the mineral wealth of the province, it would seem, has joined the agitation for action of some sort tending to bring about action—an early action—in the direction of mining this ore, turning it into pig iron and steel, and taking advantage, to the profit of British Columbia as a whole, and to the industrial advancement of Canada as a whole, of the exceptional conditions now prevailing.

Effects of War

These conditions, as we all know, have been brought about by the war. The conflict which has been raging in Europe for the past three and one-half years has made such demands in munitions and in many other respects on the iron and steel industries of the countries involved that prices have soared, and the supplies, notwithstanding the pressure brought to bear on the outputs of the mines and plants of the world,

*Portion of speech delivered in the British Columbia Legislature on April 22, 1918.

from the smallest to the largest, have been insufficient to meet the requirements. And so it has been brought home to us, both as a patriotic duty to our Empire and a duty to ourselves, that we do our best to have the iron which is lying dormant in British Columbia brought to the surface, refined, and placed at the disposal of our country and her Allies for the successful prosecution of the war and, afterwards, to assist in the vast programme of reconstruction which will have to be carried out on the Continent.

On the question of reconstruction, British Columbia occupies a very strategic position on the Pacific Coast of Canada, and will undoubtedly receive consideration to an extent the magnitude of which we may not realize.

Government Assistance Sought

The Government, I might say, has been waited on by a number of delegations, all with the same petition—that some step be taken towards the establishment of an iron and steel industry in British Columbia. And I want to say, in this connection, that those who came to us with this plea were different from some who have interviewed us on other matters.

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They were out to serve the interests of no particular district; they displayed no sectional spirit in their representations; they came together both from the mainland, the island, and they asked, not that a Government-supported furnace be established in any special section of the province, but that the British Columbia Government should show it was alive to the issue by some concrete form of encouragement to any who might, under certain conditions, be led to evince their confidence in our resources and our future by putting up the capital, the very large amount of capital, essential to ensure a successful outcome of such an enterprise.

Government Was Awake

In these observations I do not wish to be understood as intimating that the Government was not awake to the importance of the iron and steel question in British Columbia. Speaking for myself, I may say that I have realized for a good many years that, if the province wished to progress, it would have to expand industrially, and particularly in regard to our mineral wealth. We have not gone ahead as we should have done. We, apparently, have been content to stand still and watch our neighbors work; to furnish them with what Nature has been pleased to bestow on us in raw materials, while we remained content with the incidental commercial crumbs. This is no reflection on our neighbors. Like good business men and merchants they have taken full advantage of the situation, and we are justified, now that from all appearances we have awakened, to ask—are we going to continue along the old road? In all this I believe—in fact, am confident—that I am speaking for my colleagues as well as for myself.

In this connection let me quote from my platform, known as the Nanaimo platform, which has been so much discussed in this House:

"Encouragement to the iron and steel industry, and bringing into use the vast resources and deposits of iron ore on Vancouver Island."

By way of proof of my consistency in this matter I may be pardoned for referring to a resolution moved by myself at a convention, held at Winnipeg, Manitoba, in August, 1917, shortly before the formation of the Union Government now in control at Ottawa, and which was unanimously adopted.

This, I may say incidentally, was actively supported by three members of the present Union Government at Ottawa, who were in attendance and participated in the business of the convention. I refer to Hon. A. L. Sifton, Minister of Customs; Hon. T. A. Crerar, Minister of Agriculture; and Hon. J. A. Calder, Minister of Colonization and Immigration. The resolution follows:

"Whereas there is at the present time a great imperial necessity for tonnage on the high seas, and whereas in British Columbia there are extensive deposits of high-grade iron ores from which the necessary iron and steel for ships can be readily secured,

A National Enterprise

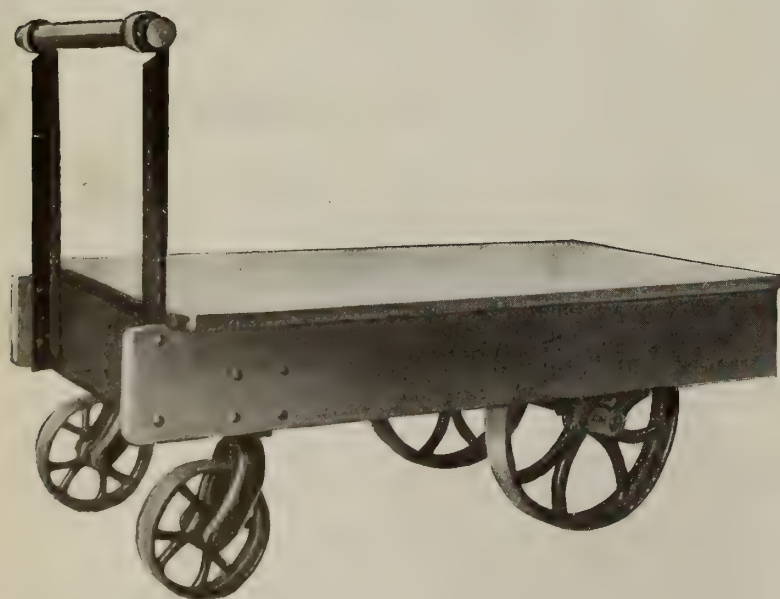
"Be it resolved that as a war measure this convention approve of a principle of the development of the iron and steel industry on the Pacific Coast of Canada as a national enterprise."

Mr. Speaker, that was my attitude then, and it is substantially the same now. I still think that the Dominion Government should shoulder some of the responsibility of seeing that our raw resources are utilized; but, as a member of this Government, holding the office of Minister of Mines, I am not taking the position that we have no duty to perform. The measure which now is before us for consideration

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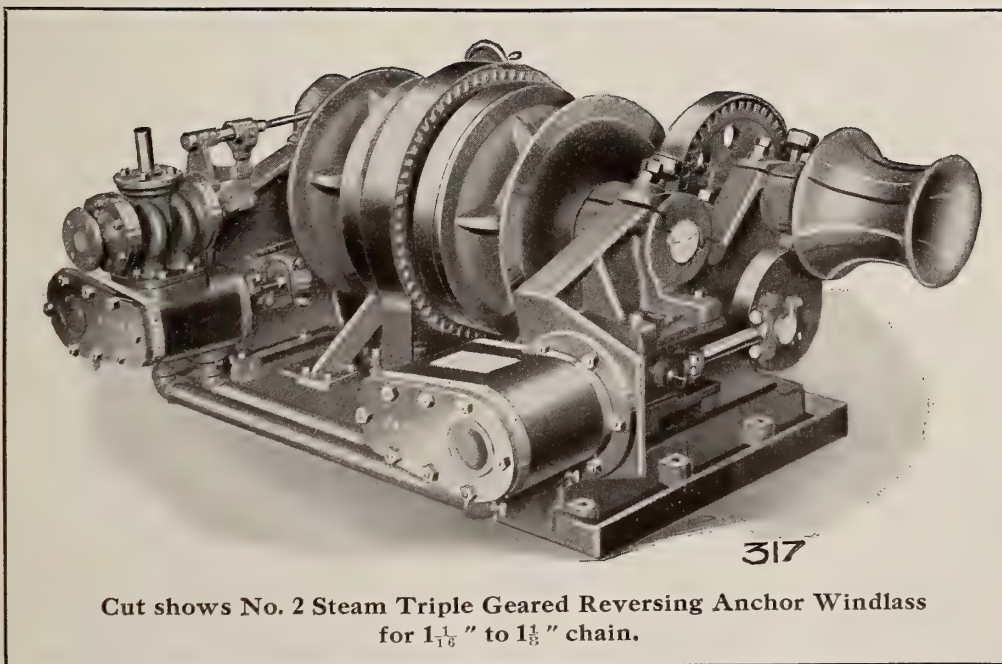
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is sufficient indication that the Administration, and I as a member thereof, believe that there should be no playing with this issue; that we are bound to handle it in all seriousness and by co-operation, not as supporters of one Government or of another Government, but as citizens of Canada, do all we can to promote our industrial arts, to forward the interests of the Empire, and to see that we are equipped to take the part which our heritage warrants in the economic competition which promises to develop with increased intensity after war is over.

Data Required

The Government always has been alive to this question. But, as you can easily understand, it is not possible to decide on just what is best to be done in a matter of this kind in a day or a week. One of the first matters of which I took cognizance on assuming the portfolio of Minister of Mines was the lack of accurate knowledge of our tonnage in iron ore. We had reports, but they were of a general character, and I took the first step at the earliest opportunity to obtain from this Legislature power, through the Mineral Survey and Development Act, 1917, to obtain more detailed information along the lines indicated. While no actual diamond drilling, under the provisions of this measure, has yet been done, the engineers appointed under that Act have been busily engaged during the past summer in the inspection and the submission of reports on our iron deposits. It will be possible, as a result, to undertake diamond drilling with, I am sure, good results. In the meantime the Department is engaged at the present moment in the compilation of a report of our iron resources from old and from newly-acquired knowledge.

This is a most important point. Of that there is not the slightest doubt—in fact, it is apparent to everyone who undertakes consideration of the question—that the first thing necessary is to ascertain the amount of raw material available. But it would be folly to suppose that it can be done in a short time. The establishment of such figures is a matter of years of work and of development. It is particularly hard to get anything definite and satisfactory with respect to British

Columbia's iron resources because, in the past, there has been so little done beyond prospecting. Engineers go to a property and are only able to report as actual ore available what they are able to see, and, when asked for probable ore, with proper professional conservation they give estimates which they feel reasonably sure, from their geological knowledge, are well within the facts.

Reports of Experts

I may say that in considering this question I have had prepared for my information a number of reports by various experts on our iron resources, and now, I think, is the proper time to refer to some of them. One engineer opens his statement thus: "In attempting to give any description or idea of the iron ore deposits of the coast of British Columbia, one is immediately confronted with the fact that, almost without exception, none of the known deposits have been worked other than superficially, and few have received any further development than very shallow open-cuts, tunnels or shafts."

He then goes on to point out that it is estimated for Vancouver and Texada Islands alone the actual and probable ore totals over 5,000,000 tons, which would be sufficient, if we take the requirements of a blast furnace as being 200,000 tons of ore a year (equivalent to about 100,000 tons of pig iron) to supply the requirements necessary for twenty-five years.

Another engineer gives a rough estimate of the tonnage of magnetite iron ore on the southern coast, as far as he has examined, as follows:

	Tons.
Actual ore	630,000
Probable ore	6,050,000
Possible ore	10,500,000

To these figures he adds the following qualifications: "This would undoubtedly be largely increased by further prospecting."

Now, Mr. Speaker, I would like, for a minute, to direct the attention of the House to statistics issued in 1917, showing the established holdings of the different large steel corporations of the American Continent. They follow:

Company.	Ore District.	Tonnage Owned.	Present Annual Duration Supply	
			Draft.	Years.
U.S. Steel Corporation	Lake District.....	900,000,000	21,000,000	43
U.S. Steel Corporation	Lake and Alabama	300,000,000	23,000,000	55
Rep. Iron & Steel Company.....	Alabama.....	89,000,000	700,000	127
Rep. Iron & Steel Company	Lake and Alabama	128,000,000	2,000,000	64
Pennsylvania Steel Company	Cuba Alone.....	600,000,000	954,092	642
Beth. Steel Company	Cuba Alone.....	250,000,000	318,814	783
Sloss Sheffield Company	Alabama.....	78,000,000	800,000	95
Woodward Iron Company	Alabama (red ores)	235,000,000	500,000	450
Dominion Steel Corporation	Newfoundland.....	600,000,000	700,000	425
N.S. Steel & Coal Company	Newfoundland.....	2,000,000,000	600,000	3,300

These figures speak for themselves. They convincingly prove that, as far as the iron and steel industry is concerned in the light of the figures I first quoted, we are yet only in our very initial stages. It will be seen that in the case of each of the companies referred to its ore has been blocked out by diamond drilling and other processes. They know, as accurately as it is possible for modern scientific methods to gauge, just what raw material they have available. What we know of British Columbia's potentialities looks small in comparison with these, and yet I, for one, believe that when the full story of this province is told it will compare more than favorably with the resources of any of these corporations, not excepting the United States Steel Corporation, with its 2,100,000,000 tons of ore, or the Nova Scotia Steel Co., with its 2,000,000,000 tons. But to prove this beyond peradventure means the expenditure of money, much capital and the possession of faith.

In my opinion it indicates in a most striking way that we are facing no small problem, but one that must be carefully

and intelligently treated, and that, in making a start, we must be sure that there are no false steps, but that the industry is established, no matter on how small a scale at the outset, on a firm basis, and so encouraged and stabilized by legislation as to insure gradual expansion as the provincial mineral wealth is unfolded.

Just a word as to the quality of British Columbia's iron ore. This is a matter from which we can take every encouragement. It is something we know something about of a definite character. Our magnetite ore unquestionably is of the highest standard, and in this connection I wish to quote an engineer of the highest qualifications, as follows:

"The ores referred to as on the coast islands are exclusively magnetite iron ore. These magnetite deposits are always replacements of limestone, and are found in or near limestone deposits, and the ores are apt to carry some lime as gangue matter, rather an advantage from the iron smelter's point of view. The iron content of these ores will run from

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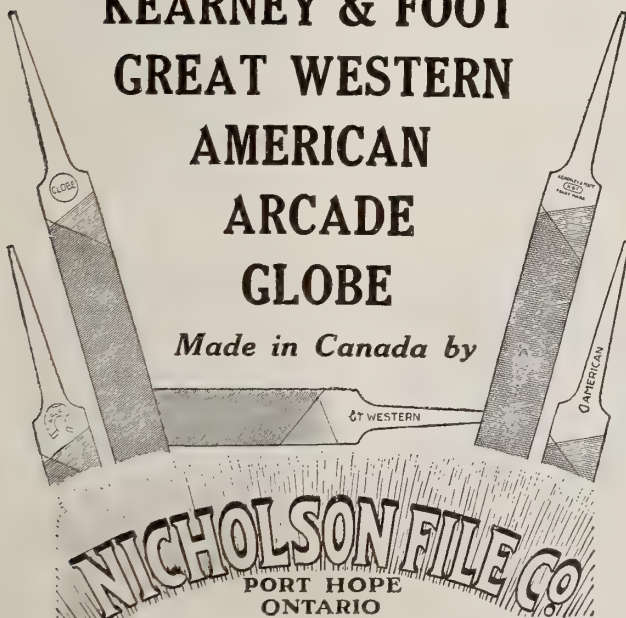
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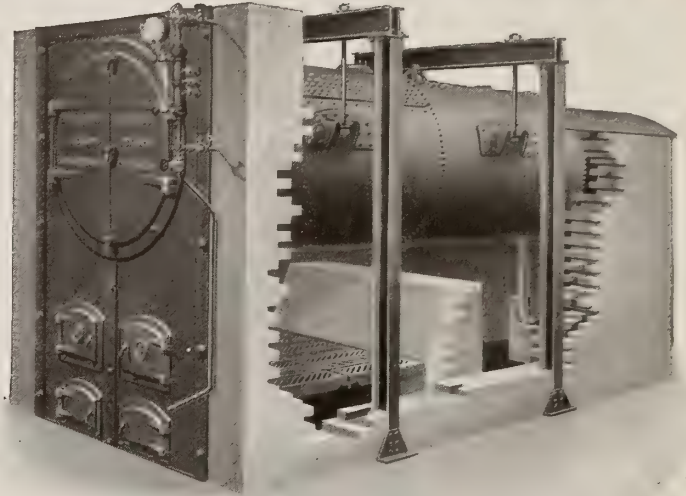
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50 to 65 per cent. iron on commercial samples; the sample of a 600 ton lot of ore from Texada Island is given in the tenth census of the United States as having run 65.7 per cent. iron. Of course many of the deposits are not as free from gangue as the Texada Island deposits, and parts of some of these deposits might require magnetic concentrating—a cheap process.

"Lindeman, in his 'Iron Ores of British Columbia,' Bulletin No. 47 of the Mines Branch of the Dominion Department of Mines, estimates the average of the deposits he examined as capable of producing a 55 per cent. iron ore.

"It would be safe to count on two tons of average ore producing one ton of pig iron."

Again the same engineer says:

"The magnetites of British Columbia are unusually free from impurities which would injure the grade of iron produced, and they carry above 50 per cent. metallic iron. Some of the deposits do contain admixed iron sulphides, but these can be removed by magnetic separation and by roasting."

Coal Values

Having dealt with the question of the ore available and its character, let us turn for a few moments to that of fuel. I don't think that there is anyone who will question that we have the coal. We are a comparatively young province, and yet the output of our coal mines has an established reputation and is in demand throughout the Western United States, and Vancouver Island is one of the most important of the coaling stations for the mercantile traffic of the Pacific. In 1916 the value of the product of our collieries totalled \$8,900,675, and in 1917 \$8,518,784. In 1916 there were turned out 267,725 tons of coke, valued at \$1,606,350, and last year 159,554 tons of coke brought \$957,324. When it is remembered that at

present the manufacture of coke is but an incidental, and that practically all that is made comes from the Crow's Nest Pass collieries for use at the Trail smelter, it will be recognized that this is an industry which is decidedly in its infancy. With the assurance of a demand for such fuel for smelting purposes we may be sure that it will be forthcoming.

As far as we know at present the coal of the Crow's Nest field makes a better coke for smelting purposes than possibly that of the island fields, but it is significant that at this moment the Granby Mining and Smelting Company is engaged in the development of new coal mines on the island, and that in connection with this enterprise it is intended to instal by-product coking ovens. The intention is to use the coke for the Anyox smelter and to market the by-products. And the point I wish to make is that if one company can do it, it can be done again to supply fuel for iron smelting, providing it is found that it is better to use coke than to attempt the electrical method of smelting in British Columbia under present conditions.

Question of Markets

As to market, it is not claimed that there is at the present time in British Columbia a market sufficient in size to absorb the whole product of a commercial unit of an iron blast furnace. That will have to be provided by the stimulation of such industries as are based on the use of iron and steel, and which are essential to the economic development of the country. Among such industries may be mentioned ship-building, for which iron is essential, and which industry opens up as co-related enterprises an endless system of interlocked industries such as woodwork for fitting (using our native woods), rope-making, the raw material for which comes from the Pacific Islands; foundries and machine shops follow, and each brings in its wake subsidiary companies. Again, in con-

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nection with an iron industry the manufacture of tin-plate might be undertaken. This is peculiarly applicable to British Columbia, since so large a quantity of tin-plate is used for canning of both our fish and fruit. Further, as related to our zinc industry and the manufacture of refined zinc, there is the possibility of making galvanized sheets and pipe. This would be of special importance to us as giving an opportunity for the local consumption of our refined zinc.

Control of Resources

To look at what is involved in this industry from a broad standpoint it seems to me that it must be apparent to all thinking men that, whatever may be true of the past, the safety and continuity of the British race depends on their control of the natural resources of coal and iron within the Empire. Mr. Wallace Thornycroft, the noted shipbuilder and iron master, speaking at one of the Dominion's Royal Commission in London in 1912, said that Great Britain imported over 6,000,000 tons of iron ore per year. Of this 5,000,000 tons came from Spain, and the balance from Norway and Sweden, and that Great Britain herself only supplied 1,500,000 tons. Therefore, he argued, it was plain that Great Britain's iron industry depended upon foreign ore supplies. Not only so, but at the then rate of consumption the probable life of the deposits in Spain would not be more than twenty-five years.

It will, therefore, be easily seen that the Motherland must look to her Overseas Dominions for her supplies of ore in the future. In 1913, just previous to the outbreak of war, the estimated world's output of iron ore was approximately 180,000,000 tons per year. The United States, Germany and Great Britain accounted for seven-tenths of the world's output of pig iron, estimated at 75,000,000 tons, and for three-quarters of the aggregate production of steel, amounting to over 55,000,000 tons.

Iron Production

The production of pig iron in the United States increased from 8,000,000 tons in 1896 to over 37,000,000 tons in 1915. The total shipments of iron ore from the mines in the United States in 1915 was estimated to have exceeded 55,000,000 tons, an increase over 1914 of over 38 per cent., and, based on the same price as received in 1914, represents an increase in total value of about \$28,000,000.

In the face of these figures I am sure that the absurdity of talking of the lack of a market will be clear, and I do not think that there can be any doubt that British Columbia's opportunity has arrived, and that the enthusiasm of the delegations which have waited on this Government, and one of which is now presenting its case to the Dominion Government, is fully justified.

As to the policy of offering a bounty on the production of iron ore, I may say that it is not an experiment. It has been tried before in Canada, with very satisfactory results. I have the record before me from which, for the benefit of the House, I will quote. In 1894 the Dominion Government offered a bounty of \$2 a ton on pig iron and steel. This was raised in 1897 to \$3 a ton. In 1899 the bounty was graded down, and in 1903 a bounty of \$3 a ton was placed on wire rods, \$3 a ton on structural steel, and the same on rolled plates. These bounties were extended to 1907. Pig iron manufacturer from Canadian ore from 1907 to 1910 was allowed a bounty from \$2.10 per ton in 1907 to 90 cents per ton in 1910. On pig iron manufactured from foreign ore during the period extending from 1907 to 1910 there was a bounty graded from \$1.10 per ton in 1907 to 40 cents per ton in 1910. On puddled iron bars it was placed at \$1.65 per ton in 1907 and graded down year by year until in 1910 it was 60 cents per ton. Bounties were also given on rolled round iron bars. The two companies which



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derived the greatest advantage from this Federal policy were the Nova Scotia Iron and Coal Company and the Dominion Iron and Steel Company. The bounty, I may add, lasted from 1894 to 1910.

Iron Markets

The effect of this policy now is apparent. The two companies of Eastern Canada which thus were extended a helping hand until able to take care of themselves now form the backbone of Canada's industrial life. The Dominion Steel Corporation, with its 600,000,000 tons of ore blocked out and its annual refinement of 700,000 tons, has enough raw material ahead, at its present rate of use, to last 425 years, while its manufacturing plants have been of signal service to the Empire throughout the war. The present demands of its plants are at the rate of 600,000 tons a year, so that with 2,000,000,000 tons of ore known to be available, there is an assurance of operations, at the scale now reached, for 3,300 years.

I am quoting these figures merely to show what remarkable progress has been made through the adoption of a policy of encouragement by legislation, and also by the application to the problem of the industry of intelligent, energetic and courageous management. Government assistance will not make an iron and steel industry such as we want in British Columbia, and such as our resources entitle us to, without the other elements to which I have referred. But it is most important that when capital is ready to take up the task, and able men with a thorough knowledge of what they are undertaking are prepared to enter into it, the Government adopt a policy that will guarantee reasonable aid and, perhaps even more important, will assure them of stable conditions, in so far as it is possible for a Government to do so. There is no doubt, apart from the question of a bounty, that it is a big thing to men who are about to make an investment which will be called for to put a steel industry on its feet and bring it to

the point of yielding returns, to know that they have the sympathy and the whole-hearted support of the Administration.

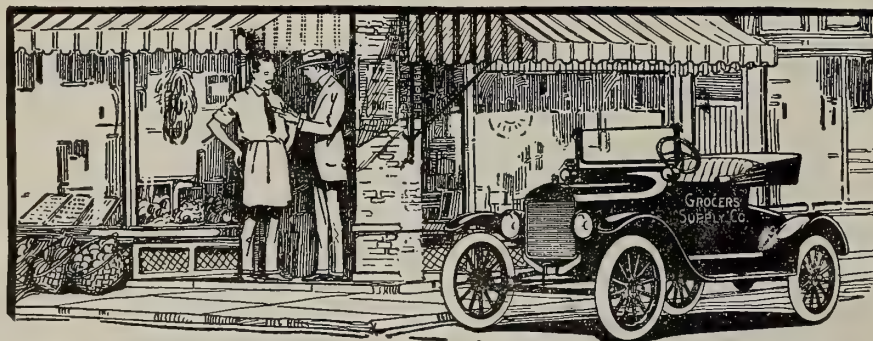
The story of the Nova Scotia Steel and Coal Company, which may be selected by way of illustration, is one which points a moral to British Columbia. Sixty years ago it consisted of nothing more than a little forge shop, with a capital of \$4,000 and ten employees. To-day it means dividends to shareholders the world over, and directly maintains at least 40,000 people in the Province of Nova Scotia.

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By EDWARD N. HURLEY
Chairman U. S. Shipping Board

(From the "Scientific American")

IF a bridge could be built across the Atlantic would any one doubt the world would be made safe for democracy before the year was out? Men and supplies are useless without means of getting them to the fighting front.

So winning this war comes back to the vital need of ships. Upon the Shipping Board has devolved the responsibility of supplying this need under extraordinary conditions. We are told that the minimum requirement is 6,000,000 tons. America, whose flag has almost disappeared from the seas, is now expected to produce within one year more than three times the tonnage Great Britain produced during the two preceding years, 1,700,000.

This call comes when most if not all of the established yards are rushing construction on dreadnoughts, destroyers, submarines, fuel ships, tenders and other auxiliary craft, and while munition makers absorb that part of skilled labor not called to Government navy yards or private plants.

Wooden Shipyards

But much has been done. First came the problem of new wooden shipyards. Eighty-one new ones have been emplaced on tracts which a short time ago were barren spaces. And this represents indeed a great task, since to build a shipyard and then organize a staff to operate it formerly required from one to three years before it could produce to maximum capacity. Shipbuilders can be made of men formerly engaged in other craft, but not all at once; nor can they produce a maximum output until they have found themselves.

The completion of the new yards was complicated by extraordinary difficulties. Much time had to be devoted to the old shipyards, which, owing to the severity of the winter, had difficulties with deliveries as well as with labor. But that task is nearly finished and when the new yards are working to capacity, we will be producing ten times the ship tonnage that was produced by all the yards of the United States in 1916.

It took Germany forty years to build up her military machine. In less than eight months we have built up a shipbuilding machine, in the United States, which, when it gets into full swing, will defeat the military machine of Germany.

For the construction of wooden ships there are 332 launching ways built or in process of construction. Up to March 1st 281 keels for wooden and composite vessels were laid. Up to the present time 10 wooden ships have been launched.

Over a Million Tons

On March 1st the total deadweight tonnage of the Ferris Standard 35,000-ton ships whose keels had been laid, amounted to 866,500 tons. Ferris ships now under construction in all parts of the country come to a total of 1,123,500 tons.

Assuming the available ways will each produce two standard ships per year, we would turn out about 2,300,000 dead-

weight tonnage of wooden ships every year. Now when we entered the war 37 steel shipyards with 162 steel shipbuilding ways were partly engaged on commercial work and partly on naval vessels. Under the circumstances the output of merchant tonnage had averaged about 500,000 deadweight tonnage per year for the last 16 years. With 6,000,000 tons to build the problem was plain; build new shipyards, enlarge old, educate new shipbuilders, create new engine, boiler, and turbine manufacturing plants and provide new facilities to manufacture the thousands of various items that go to make a ship in all its myriads of parts.

Thirty New Steel Shipyards

The 37 yards have now increased their shipbuilding ways from 162 to 195. Either built or in course of construction there are 30 new steel shipyards with a total of 203 shipbuilding ways aggregating 67 steel shipyards with a total of 398 building ways. Thirty-five yards with 258 ways are on the Atlantic and Gulf Coasts—19 with 66 ways on the Pacific, 13 with 74 ways on the Great Lakes.

With the new yards completed and their organization perfected, these 67 steel yards should turn out 7,000,000 deadweight tonnage of steel merchant ships per year. Adding the expected wooden ship tonnage gives a grand total of 9,300,000 deadweight tonnage yearly capacity when the yards, now 70 per cent. completed, are finished, independent of the ways now in use for the navy in these yards, which would add another 650,000 deadweight tonnage to these figures.

The labor problem has figured largely in the plans to create this industry. In 1916 there were less than 45,000 men in all the shipyards. On March 2nd, 1918, this number had increased to 236,000; 170,589 on actual ship construction, the others on yard construction, etc.

To build this enormous tonnage (an increase from 500,000 average to almost 10,000,000 in two years) between 450,000 and 500,000 men will be needed.

On January 28th a drive to enroll 250,000 skilled mechanics in the U. S. Shipyard volunteers was started. Men from every line of industry who could develop into good shipworkers were wanted; within one month's time the enrolment was practically complete.

Shipyard Volunteers

The U. S. Shipyard Volunteers is a reserve organization of skilled mechanics, who have placed the welfare of the nation above all else and stand ready to go to the shipyards when called.

With the co-operation of the international labor unions, a far-reaching scheme of industrial education has been put in operation. At an instruction training centre at Newport News 247 skilled mechanics, selected from 22 yards, have been detailed for a six weeks' course of intensive training, to fit them as instructors for recruits brought into the shipyards. One hundred and fifteen of these representing 16 trades, have completed the course and been sent out as instructors. The men who are taking this instruction course will be capable of training an industrial army of 37,000 men.

Few people recognize either the magnitude of the shipbuilding task, or the work so far accomplished. A single comparison may show a little of both. The Hog Island ship-

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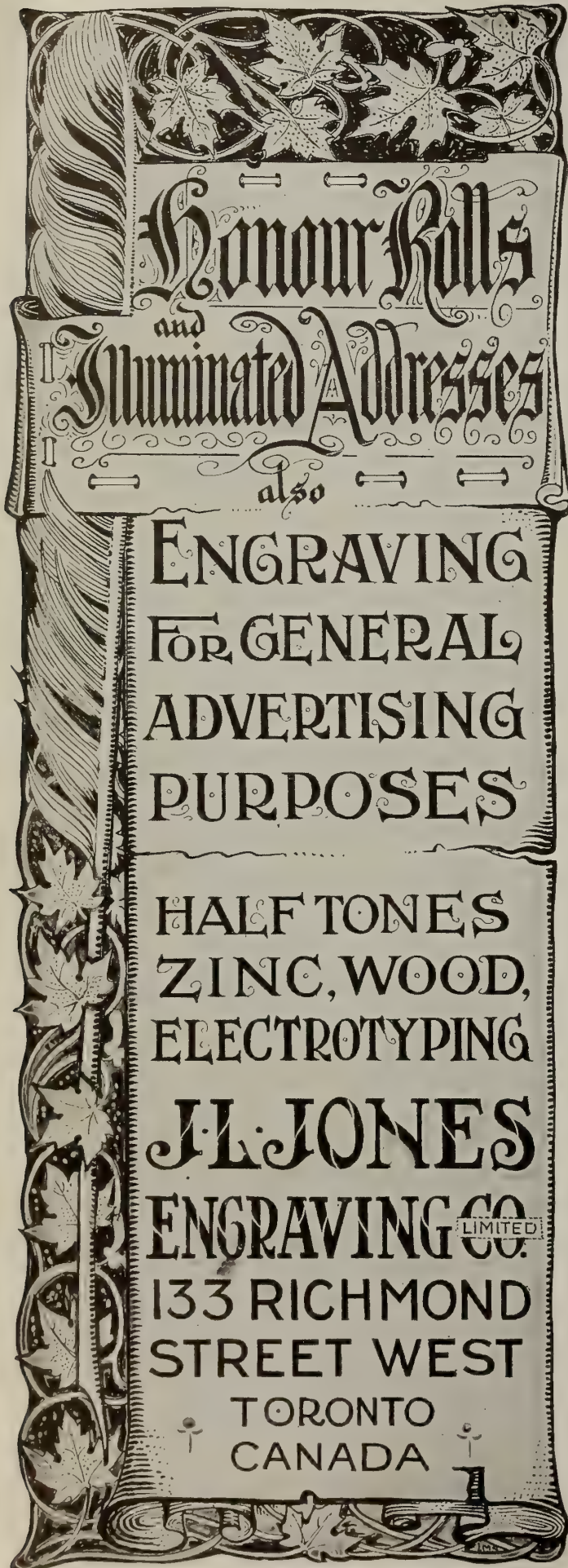
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yard with 50 ways building 8,000 ton ships, when it is organized and running to its maximum capacity, will turn out in one year 55 per cent. of the greatest amount of tonnage which Great Britain has ever turned out in any single year. Her maximum output was in 1913, when she built 688 merchant vessels—representing 2,898,229 deadweight tons. Hog Island, when running at full capacity should turn out 1,600,000 deadweight tons a year from materials fabricated in different parts of the country, brought into the yard on freight cars, and run to the ways and then put together.

What May Be Expected

What all the yards may do will not carry a single grain of wheat now. But yards are delivering ships at the present time. In January 11 steel vessels with a deadweight tonnage of 91,441 were delivered, in February 16 vessels with a deadweight tonnage of 123,100. Ten vessels with a tonnage of 82,300 have been delivered in March, and 14 other ships, bringing the March delivery up to 197,075 tons, should follow.

The programme could not be met without resort to the "fabricated" or more properly the assembled ship, of which 440 are proposed or under construction. The greater part of the work of riveting the plates and steel bars for assembled ships is being done in bridge-building shops, spread all over the country from Omaha east. In some cases 95 per cent. of the work will be fabricated before it reaches the shipyard. This adds enormously to the actual shipbuilding forces, and makes possible the production of the above shipbuilding tonnage.

The situation giving most concern is the completion of turbines and engines. The very rapid expansion of the shipbuilding programme caught the turbine and engine manufacturers unprepared. Special tools of all kinds are required for engine-builders' shops, and these tools must be secured from manufacturers already overcrowded with war orders. The severe weather and the transportation tie-up seriously delayed the construction of some large turbine-building plants, causing a delay for lack of the turbines and engines which, however, it is expected will be made up later.

Opposed to Conscription

As to labor, I am opposed to its conscription. I believe labor will itself produce conditions which will render idle all talk of conscripting workmen. The vast majority of our workmen are men of intelligence, and when they come to a full realization of the fact that any defection on their part now will not only imperil the nation, but will injure their brother workers in almost every other field, I feel assured they will respond to all demands made upon them.

I do not anticipate any trouble on account of strikes. Most strikes have primarily been caused by a feeling on the part of workmen that they are underpaid while owners and contractors have been largely profiting by their sweat. But working for Uncle Sam is a different matter; he is not trying to make anything out of labor, and, moreover, they are now working for their own well-being and national safety.

Shipping is the essence of the struggle in which the world is now engaged—the keystone of the arch. If it fails, all else fails. The Shipping Board is keenly alive to that responsibility. It is for press and public to help now, and the best way to help—until we can get into our stride—is to let us alone. The Shipping Board is very busy—so busy that emblazoned on its banner is the admonition of Dr. Jewett—"Don't apologize, don't explain; let 'em holler, GET IT DONE!"

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Population and Production

An Analysis of the Factors That Will Affect Prices After the War, Including a Consideration of Population, the Labor Supply and Finance

(From "Production," London)

With every month that the war continues, it becomes more and more clear that the question of the post-war prices of raw materials, of produce, and of money is of steadily augmenting gravity, and some attempt must therefore be made to analyze the factors, many of them contradictory, which will affect the conditions of the markets. An adequate survey might involve the writing of an encyclopædia by an economist of genius; but as the genius, if he existed (which is doubtful), would probably be charged by a paternal Government with the sticking of stamps on letters in some obscure department, we must make shift to do without the encyclopædia. But since the question of prices determines very largely the real, as distinct from the nominal value of wages, and the extent of the export trade, and consequently some part of our ability to make a quick recovery from the war, it will be useful to set down a few of the considerations which must affect prices.

The Trend of Prices

1. In the generation before the war, there was a general fall of prices from 1872 to about 1896; from 1896 or 1900 they rose slowly but fairly steadily until 1914, and they were still rising when war broke out. There is a school, which is by no means without influence, which attributes this rise entirely to questions of currency and the production of gold and silver. While not disputing that some tangible influence was

exerted by these factors, it is certain that other things exerted a great, and probably a considerably preponderating influence. From 1872 to 1896 the increased production of the soil outpaced the increase of the world's population; from that time onwards the increase of population began to outpace the increased production of the soil; hence prices fell in the first period because there was more food than mouths, and rose in the second because there were more mouths than food.

Is Population Increasing?

It becomes, therefore, of first importance to consider whether the population of the world has still continued to increase during nearly four years of war. On the whole, the conclusion must be that it has increased. In Germany it has admittedly fallen; in Austria it has almost certainly fallen, as it has also in Serbia and Armenia, and possibly in Russia. But in England it has increased, and so far as can be seen, it continues to increase. In the United States and most extra-European countries, it has certainly increased. There is reason to believe, therefore, that in spite of the losses caused by war, the population of the planet will be larger in 1919 than it was in 1914.

As to whether this population is more proficient at agricultural production could only be decided, if it could be decided at all, after a lengthy examination of evidence. On the one side is the fact that many women now do field work who did none before, and that machinery has been employed more than ever; on the other side are the facts that a part of the producing population has been killed, another portion is handicapped by wounds, and the new population which, in crude statistics, has taken their place, is still being wheeled about in a perambulator instead of pushing a plough. The population, therefore, although more numerous, is possibly

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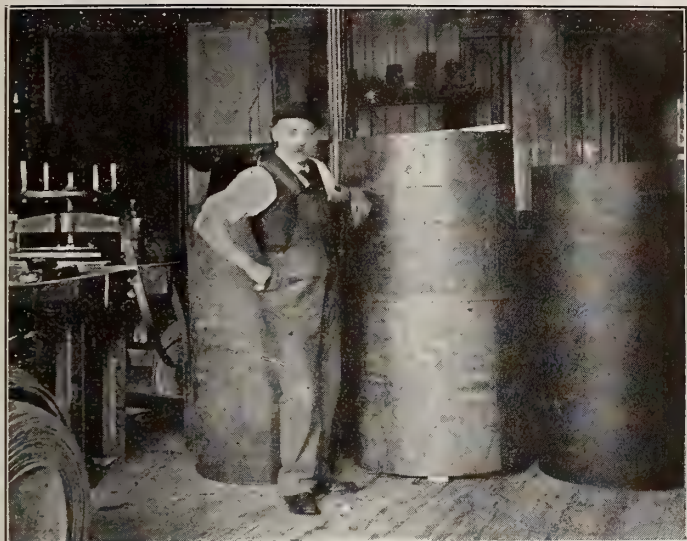
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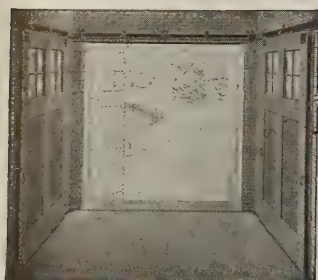
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less proficient; in addition, the soil is less productive, owing to the transference of chemicals from agriculture to munitions. On these grounds it may be assumed that even after every man mobilized in all the armies of the belligerents returns to construction work—a process which must take two or three years—the prices of food would not from this cause alone fall to their 1914 level for several years.

2. But this cause does not stand alone; it is only one of several. Immediately the war is over there will be an enormous demand for labor. Many great industrial projects, which were contemplated or in process of carrying out in 1914, have been stopped; their completion is now urgently necessary, and must be put in hand again the moment labor and materials are available. Many other undertakings are suffering from neglected repairs or maintenance; others from the destruction of war. British railways and shipping have suffered heavily, the one from accumulated wear and tear, the other from piracy; both will absorb much labor for some time before they stand where they were in 1914, and neither can afford to wait.

Building also, a trade which makes demands on almost every other trade, is heavily in arrears. All these will demand labor and materials, and then competition for both will tend to send up prices until their demands are satisfied and the work of repair is done. But even if British railways could be brought back to their old high level in two years, which is doubtful, it is certain that shipping cannot be restored in that short time; and sufficient housing accommodation could hardly be provided in less than ten years, seeing that there was a shortage of houses before the war, that none have been built since except in the new munition centres, and that large numbers of people have married during the war and are only awaiting the close of the war to return to civil life, when they will urgently require their own houses. At present the husband is in the army and the wife either living with her parents or in furnished rooms. This return to normal conditions also implies an extraordinary activity in the furnishing trades; at present little furniture is being made, and the prices of bad second-hand stuff are extortionate.

Question of State Control

Incidentally the shortage of shipping and the need of railway repairs raises the thorny question of State control; but here some distinction may be made. Many merchants and manufacturers advocate State control of railways and shipping for some years at any rate, after the war, on the ground that without this control freight charges will soar far higher than is necessary, to the detriment of all business dependent on freight—which means practically every business. Ship-owners have one and all repudiated State control for an instant longer than is necessary, on the ground that they can manage their own business better than the Government. Similar protests have not been made by the railways. This reticence doubtless does not spring from any conviction that the Government understands railway management better than the railway companies, but from the knowledge of shareholders that there was heavy capital depreciation for some years before the war, and from the knowledge of railway directors that the high price of coal and wages, coupled with the inevitable demand for the reduction of the present increased fares and for lower freights will make it extremely difficult to pay a dividend at all.

On the whole, the trend seems to be for some form of state-control, or state-ownership of railways; but it may be noted that if freights have to be artificially cheapened, as seems possible, the deficit can only be met by increased general taxation.

If, as is probable, the railways require fresh capital, the question of state-control will at once become urgent. There

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is a demand for the electrification of railways, but this requires fresh capital, and the rate of interest is now high. The electrification of the suburban Great Eastern lines, for instance, was planned several years ago, but postponed. It could have been carried out when capital was easily raised and the Company's shares stood relatively high; now capital is dear, and the shares are heavily depreciated. The result is that the Great Eastern, with the heaviest suburban traffic in the world, is still worked by a system which is proved to be out-of-date as regards suburban traffic; yet its suburbs and its traffic are continually growing, and the need for electrification becomes more urgent as the capacity for carrying it out becomes less.

3. A fall of prices can only be brought about by production overtaking the demand, and increased production is the cure for most of the economic trouble of the day. But increased production is largely dependent on machinery; the manufacturer of machinery has to import much of his materials before he can manufacture. The more facilities therefore that are given to him the sooner will production increase and prices fall to a reasonable level.

Interest Will be High

4. The financing of business will have considerable effect on the restoration or expansion of trade, and the question of capital after the war thus becomes of primary importance. The normal rate of interest will be high, probably for the next twenty years at least; governments as well as private organizations will require loans, and the inevitable competition of state and private enterprise, which is one of the main questions before the next generation, will incidentally tend to force up the rate of interest. In this connection it must be remembered that the present rate of interest for first-class Government securities is now nearer six than five per cent., and that private business has to pay a higher rate. On the other hand, the end of the war will release a large amount of floating capital for day-to-day employment, which, in the feeling of insecurity natural during the period of reconstruction, will finance temporary needs at a low rate, when the security is unimpeachable.

Against this, however, has to be set the fact that values are everywhere inflated, and that more money is required to build a factory or start any new venture, or to carry on an old one, than before the war. In these circumstances, the conclusion seems certain that there will be no appreciable fall in prices for some years after the war, since every factor that bears upon prices tends to maintain them; and when to this is added the certainty of heavy taxation, which diminishes purchasing power, and the insistence on a higher standard of comfort, which means a greater demand for goods by the working classes, the persistence of high prices over a long period becomes inevitable.

A Transportation Problem

Establishment of Car Ferry Has Driven Away Other
Shipping from Prince Edward Island and Has
Produced a Serious Congestion of Traffic

("Montreal Journal of Commerce")

Hand in hand with the movement to increase production in Prince Edward Island is the agitation now being made by our people to have the gauge of the P. E. Island Railway standardized.

A delegation representing both parties in the Provincial Legislature and the Boards of Trade of Charlottetown and

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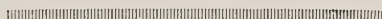
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Summerside have gone to Ottawa to urge upon the Government the need of having this essential work done.

The first point taken up by the delegation was the alarming decline in our water borne traffic. In 1911 2,465 steamers and sailing vessels with an aggregate tonnage of 51,800 cleared from Charlottetown. Last year this was reduced to 1,694 with a tonnage of 171,000. Moreover a few years ago many fishing vessels from Nova Scotia made fall trips to the Island carrying coal inward and farm produce outward. Since the war this traffic has ceased. At one time we had a large fleet of small coasting vessels and these have almost all vanished. The whole of this water traffic has been diverted to Port Borden, there to be carried across in the car ferry to Tormentine. Thus has been imposed upon our railway system an almost impossible task.

An Almost Impossible Task

In October and November last an average of 48 cars of potatoes daily left the Island for the mainland by the car ferry and by Government steamers plying between Summerside and Pt. du Chene and Charlottetown and Pictou. As the two latter routes have been eliminated and assuming the traffic remains stationary, 48 cars daily will be handled by the Car Ferry route next October. This is not a fair criterion as the embargo on potatoes last November curtailed the output. Half a million bushels were shipped from the Island last fall, but if the gauge had been widened an additional half million bushels could have been handled.

This fall there will be a large importation of coal which did not occur last year. To meet the requirements of the Province it will be necessary to import at least 30,000 tons on twelve cars daily between the first of June and the thirty-first of December. Based on the trade of 1917 87 cars daily would have to be transferred at Borden during October and November next, and if the expected increase in food products is realized there will be 102 cars daily during these months.

After having examined all temporary methods of relief the delegation concluded that the only proper and permanent solution of the difficulty is the standardization of the gauge. This should be undertaken at the earliest possible moment so that a portion of the road may be ready for traffic before the crops are moved.

The distance between Borden and Summerside and Charlottetown is 65 miles and the total length of the Island railway is 275 miles. Of the imports to the Island last year via the C. G. R., 70 per cent. was to Charlottetown and 15 per cent. was to Summerside. Therefore, 85 per cent. of the inward traffic passes over these 65 miles and 35 per cent. of the exports also are handled on this short section. The widening of the gauge between the above-mentioned points as an initial step would greatly relieve the situation. It would eliminate the waste in handling and provide quick transit between terminals. It would release the rolling stock now used between Borden, Summerside and Charlottetown for use over the narrow gauge portion. As one standard car has the carrying capacity of two Island cars and the cost of carriage in both cases is the same, not only would traffic be facilitated but there would be a substantial saving.

What Might be Done

There is a surplus of locomotives, smaller than are generally used on the mainland, but which are large enough to move the traffic on the Prince Edward Island side. These could be transferred to the Island and no additional outlay be required for motive power on the standardized portion of the road.

The 65 miles have to be ballasted, supplied with ties in any case, so the only additional expense would be the rails.

Dr. J. W. Robertson in his address to the people of the Island asked the farmers to increase the acreage by 75,000. Assuming the yield at twenty-five bushels per acre the total would be 1,875,000 bushels or 4,464 cars. If only half the objective is reached the additional transportation would have to be provided for 2,232 cars.

It is a very grave question whether it is justifiable to urge increased production unless there is adequate transportation. The standardization of at least 65 miles is a sound, economic proposition. The saving effected in the handling of freight, the reduced cost of carriage and the increased traffic together with the practical elimination of snow fighting would furnish ample returns on the capital expenditure.

South Africa's Growing Wealth

There Has Been a Very Large Increase in Local Production and Manufacture, Exports Having Grown by About 600 per Cent.

By SIDNEY E. KNIGHT
(In "The World's Markets")

Complete statistical returns for the year 1917 are not available at the time of writing, and it will be convenient to examine the trade figures for the nine-month period ending September 30. In the accompanying table are shown the imports and exports (excluding gold and diamonds) for the first three-quarters of the past two years, with corresponding details for the last normal year, 1913:

Nine months.	Imports.	Exports.*
1917	£27,693,000	£13,516,000
1916	31,465,000	14,528,000
1913	31,712,000	10,693,000

Thus imports in the period under review have fallen by about 12 per cent. as compared with the last normal year. But this is in value only. Actually the decline has been very much larger. Calculations go to show that the rise in the landed cost of imports, ton for ton, has been in the neighborhood of 25 per cent. We are paying £125 for goods which in 1913 we might have purchased for £100, and we have been fortunate that the increased cost has not been very much higher.

Increase in Local Production and Manufacture

These calculations would go to show that the actual reduction in the volume of our imports has been about 30 per cent., as compared with 1913, but it has not been wholly due to freight restrictions. There has been a very large increase in local production and manufacture. The food and drink statistics are in this respect remarkable. In 1913 (nine months) we imported articles of food and drink to the value of £5,711,000. In the past nine months our imports under these heads totalled £3,855,000, or the equivalent at 1913 prices of £2,900,000. In other words, the volume of our food imports has decreased since 1913 by nearly 50 per cent. At the same time our exports of articles of food and drink have vastly increased. They were valued in 1913 at £366,000. In the past nine months the export value was £2,933,000, which means, on the basis of 1913 prices, an increase of about 600 per cent. on the last normal year. Such a revolutionary change in the productive capacity of the Union is more than ample compensation for the heavy decline in the export of ostrich feathers, which have been knocked out of demand by the war to such an extent that we sent abroad in the past

*Exclusive of diamonds and gold.



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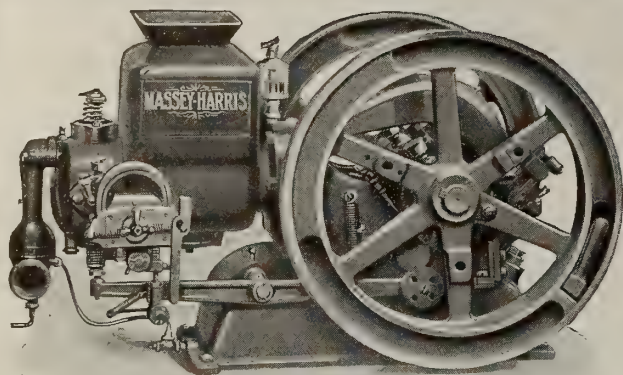


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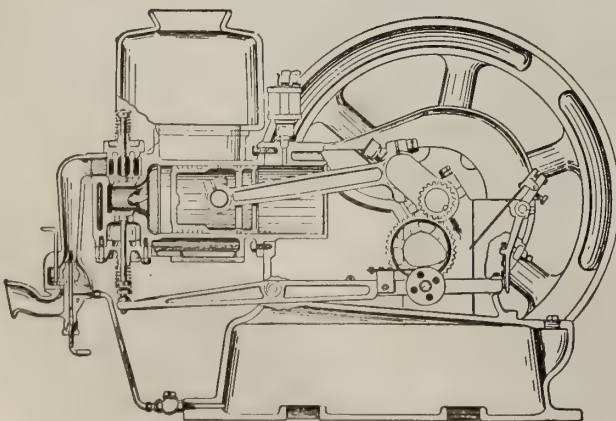
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nine months barely £100,000 worth, as against £2,250,000 in 1913. Wool farmers have been benefitted enormously by the high prices ruling during the first nine months of the past year. By the end of September about 89,000,000 pounds weight had been sent oversea, valued at £6,151,000, an average all-around price of 16½d. per pound. In 1913 the quantity exported was indeed larger. (108,000,000 pounds), but the total price obtained was £3,403,000, giving an average price of 7½d. per pound. The high prices during the current year have been mainly due to the keen competitive buying of American and Japanese agents. No local question has been discussed with more vehemence or has been the subject of so much recrimination and misrepresentation as the Imperial Government's offer to purchase the entire South African clip for 1917-18 at a price 55 per cent. in advance of pre-war prices. This offer was originally put forward last year, but for reasons which have not yet been disclosed the Union Government kept the secret to themselves, and farmers were never informed of the proposal. Had it been otherwise, there is little doubt that the offer would have been gladly accepted, as the wool market at that time was in an uncertain position, and the price offered would have been above the price ruling at the time in this country. It was, however, a different matter when the offer was repeated in June. Prices were then soaring under the stimulus of competitive buying, and a large number of farmers preferred to take their chance on the open market. Finally, the British Government undertook to purchase any wool offered at the prices already mentioned and at the end of October, the final date till which the offer held good, about 200,000 bales had been sold through the agency of the Union Government. Since then the market has been stagnant, prices have sagged heavily, and it may yet be that farmers who failed to avail themselves of the offer will see cause to regret their decision. Much of the disturbance which the question caused in South Africa was due to the unfortunate fact that political considerations were allowed to enter into a matter which should have been regarded purely from the business point of view. Mohair exports have declined heavily. The value exported in the past nine months was a quarter of a million sterling less than that for two-fifths of the previous year's shipments.

Bank Deposits Increase 48 Per. Cent. in Three Years

Banking statistics showing the position of assets and liabilities of the various banking institutions throughout the Union have just been published, and relate to the date September 30 of the year 1917. Owing to radical changes in the form of the returns following upon the Bank Act of last session detailed comparisons with previous years are not possible, but the attached figures, which are strictly comparable, show the rapid growth of private wealth in the Union of South Africa since the outbreak of the war.

	Fixed and floating deposits.	Advances to customers.
June, 1914	£33,305,186	£31,170,000
Sept., 1917	49,336,186	35,218,000
Increase	£16,031,000	£4,048,000

It will be observed that deposits have increased by no less than 48 per cent. since the outbreak of the war, while advances to customers have increased by 13 per cent. It is of importance to observe that the ratio of advances to deposits has decreased from 93 to 71 per cent. In other words, there is a large amount of unemployed capital in the banks of the Union to-day. The rapid growth in deposits is no doubt primarily due to the heavy expenditure in the Union on war purposes. Since August, 1914, this expenditure has totalled probably £30,000,000, and most of it has been on loan account.

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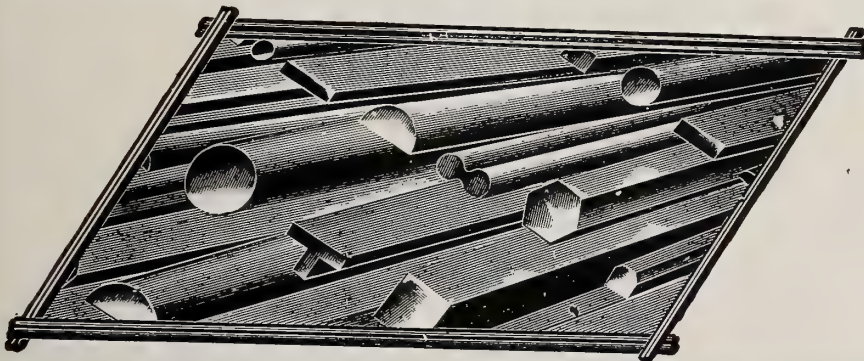
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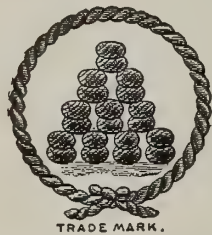
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Organization of a Big Business

Five Things Must Be Kept in Mind in Successful Management—Employment, Teaching and Training, Supervision, Promoting and Discharging

By THOMAS J. WATSON

President, Computing-Tabulating-Recording Co., New York

(From "Manufacturers' News")

Our plan of organizing and building an organization in our business is built up of the three pyramids—making, recording and selling. We build those pyramids up to the top, where we have the president, the board of directors and the stockholders. Then we try to teach the people in our organization that while there are titles all the way up those pyramids we are all working for one supervisor, that is the stockholders in our business. We believe that it is important to get the organization to doing work along that line, so that titles are removed. We try to teach our people that every man who carries a title must feel that his most important work is not supervising and directing, but assisting.

We feel that all of our people who carry titles are simply assistants to the people under them. In that way we have been able to get our organization working together as one unit, so that no one feels in the organization that they are working for Mr. Hastings or Mr. Watson or Mr. Rogers or Mr. Huston, or any of the other heads in the institution, but they are all working together for the benefit of the stockholders.

When it comes to the cost end of the business, there is nothing in connection with that that is of quite so much interest to the stockholders as costs of keeping down costs.

What Management Means

After you have your organization laid out, then comes the matter of running the organization. The problem of management enters in, and we try to teach in our organization that management means that you must keep in mind five things—the employment, the teaching and training of employees, the supervising of employees, the promoting and discharging.

We teach our people along the lines first of employing, because that is the most important, and that is one branch of the work that we cannot give too much thought and too much attention to, the employment of men; and we believe that reputation, character, experience, ambition, manner, self-determination, are the important elements to be considered when choosing an employee for any branch of work. The reputation of a man we all know is very important, and you have to consider not only what the man thinks of himself, but what his associates think of him; what his reputation is in the community in which he lives. That is very easy to find out and very important to find out, because the man who has not a good reputation in the community in which he resides and amongst his associates is not going to be a good representative for your company or any other company. Hence, character is of the utmost importance, and it is very easy to find out all about a man's character.

His experience—you have to judge a man by his past experience, when you consider placing him in a certain position, whether he is qualified to do the work and to make a success in your business.

Ambition is a very important thing, especially if it is a selling position. If a man comes to you for a position in your selling department, if you have a proposition which gives him an opportunity to make four or five or six thousand dollars a year, and you find that he will be satisfied



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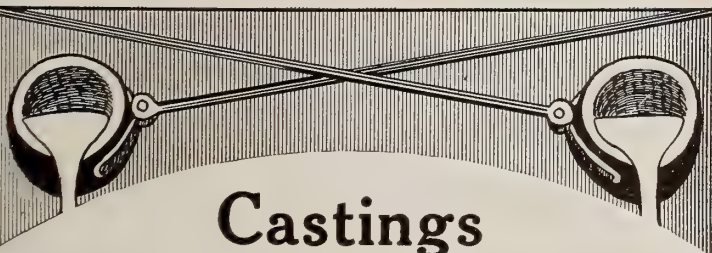
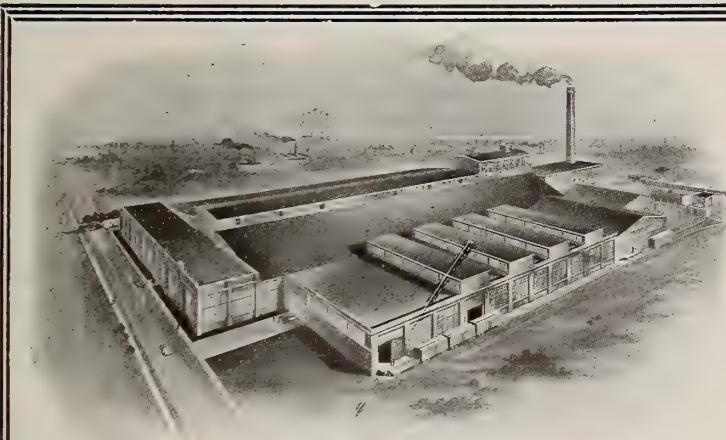
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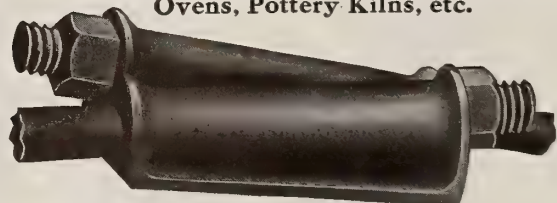
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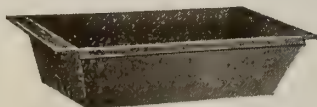


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with \$1,800 a year, then he is not the type of man that you want for that particular position. Consequently it is best to give a great deal of attention to interviewing men as to their ambition, because that counts for much in an organization. An organization without a lot of ambition is not going to be very strong.

A man's manner is easy to judge as he comes in to talk with you in regard to a position, and as he appears to you, so will he appear to the people to whom you send him to sell goods. The confidence which a man displays in talking with you about a proposition, makes it very easy for you to judge him. Get a man with plenty of confidence, a man you can make something of, an executive if the opportunity offers.

Then teaching—the training of employees in every branch of the business. There cannot be too much said or there cannot be too much done along that line if it is handled properly. Of course, you have got to give men knowledge of what you expect them to do. You have got to give them an opportunity to acquire that knowledge, and they must be taught how to apply their knowledge in the proper way.

Stick to Simple Teachings

We believe in simple teaching, we believe in teaching people—not spending so much time teaching the science of salesmanship, but more along the art of selling—the actual selling. We stick to simple teachings. First, we want the man to know all about the product that he is going to sell. There has been too much mystery about teaching along different lines. When it comes to the selling proposition—the proposition between the buyer and the seller—it is such a simple one that if we simply teach our people all about the goods, teach them all about the territory in which they are going to sell goods, point out to them the possibilities that offer themselves for their sale, it is a very simple thing for the salesman to go out into the field and present his case in a simple and effective manner to the people whom he proposes to sell the goods to.

Then we teach through conventions and schools. We run schools in our factories, and we run schools for our sales organizations. We happen to have five different sales organizations, so that we have to do a great deal of teaching, and we also have conventions where we instruct our people, and they teach us in return. In that way we exchange ideas and everybody has a greater knowledge of the business at the close of each one of these sessions.

Hold School for Executives.

Another thing that we have adopted in our business is a school for executives. I have been interested in the school work and convention work for a good many years, but for a long time I neglected the executives' school. Finally we started a school. We called together about twenty-five of the executives of the chief branches of our business, and held a school for one week. We have no regular teachers for that school, because it is understood that every executive shall take part in the teaching; and this has been one of the greatest helps we have ever had in our business, because sometimes we get to talking to the men under us and instructing them, telling them how to do a thing, when to do it, and all about it; and then find that we have men in our organization who can teach us in our school of executives. It was a great surprise to us when we realized how much we could learn, and how much we did learn, from the people whom we brought in. And it was a greater surprise to find how little we knew about some of the branches of the work in our institution. I do not hesitate to recommend to you people and all of the companies you represent that we believe that



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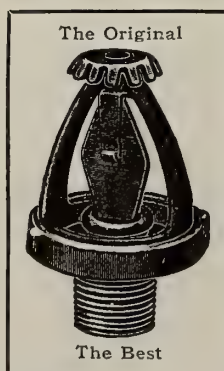
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Value of Co-operation

When it comes to supervision, of course, there is a whole lot that can be said about that, but that again is a step we try to deal with in a very simple way, for we believe that the days of the section boss in business have passed, and also of the executive who sits behind his desk and dishes out orders by the wholesale, expecting you to carry them out in a proper way. It is now an entirely different proposition, and instead of you working for me or me working for you we try to co-operate in every way, and we have met with success; so that to-day we feel in our organization that no man has any supervising to fear, and he is in a receptive mood to receive supervision. You know, if you undertake to supervise a man, and you issue him orders or instructions or directions, if he does not receive these instructions in the proper spirit you have not helped that man, but you have injured him; and one of the most effective ways of getting men to accept supervision properly is to get the thought to them that you are all working for the owners of the company and that titles mean nothing in business. We are all right in the same boat, all pulling together, and then when an order comes down from the sales manager, even though it may be a little bit drastic, when a man looks at it and reads it over he realizes that the sales manager is being supervised by somebody higher up, and that the next man is being supervised by some one a little higher up, and so on until you get to the board of directors, and that after all the stockholders are the real supervisors. They appoint the board of directors and they remove them if they do not direct the affairs of the company in a proper way; so you get your people in a spirit that they will receive supervision and not resent it, and they will profit by the supervision that you administer to them.

Another thing that every supervisor should keep in mind at all times in dealing with men is never ask a man to do anything that he would not be willing to do himself. We should all keep that one little thought in mind. It is one of the best thoughts that you can take home, and I leave it with you with the suggestion that you apply it to your organization.

You have to supervise in various ways, but the best way that I know to supervise salesmen is out in the field with their records, by keeping a record of what each man does, or calling men's attention to their records and to the records of others who are on an equal basis with them in the organization. It is easy to always keep before your whole organization up-to-date records of what every man in the organization is doing. Then there is supervision through letters, and that is where we have to be very careful—the kind of letters we write.

The best way, of course, is to come in personal contact with the man, if he is a salesman, get out into his territory, meet him and talk with him.

Criticize on Constructive Lines

Another good way to supervise a man is to criticize him, but you have to be very fair and very just in your criticism, and you have to teach your people to accept criticism just the same as they accept any other kind of supervision that you give them. I always try to criticize along constructive lines. Never say to a man, "Don't do that in that way," unless you are prepared to suggest to him a way which you believe is better. If we keep that in mind, we can accomplish much through just, constructive criticism.

I have found that one of the greatest things along the line of supervision is personal interest in the employee on the part

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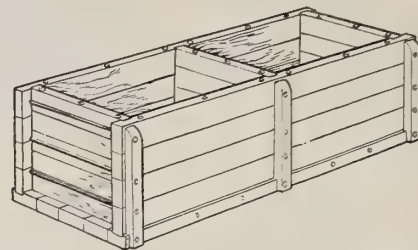
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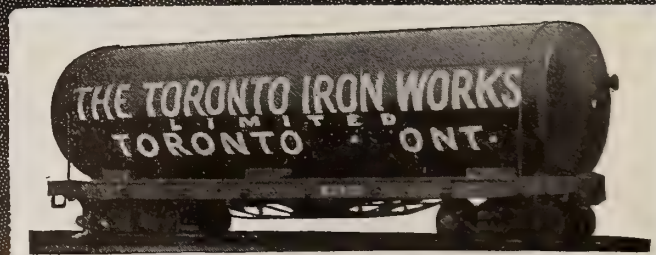
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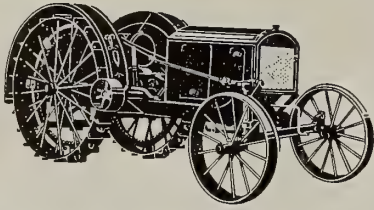
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of the supervisor. Take a real, genuine, honest, personal interest in the men who are working with you. Get on a basis so that your people will tell you their troubles, whether they are in the shop or in the office or in the field. You have got to get close to your people; you have got to live with your people, and then they will live with you, if you are worth living with; and the big things to keep before every branch of an organization, especially the people who are supervising and directing the work of other people, is to live with those men and get them to live with you, and in that way get the best out of them, and you will become stronger and they will become stronger as assistants to you.

Reward Merit by Promotion

The matter of promotion is very important in the carrying on of an organization. Watch closely the records of your people in the different branches of the business, and recognize merit, and when you do recognize merit, reward it, and reward it just as soon as you possibly can. In a growing organization we are always looking for someone to promote, because as a business grows and expands you need more people in executive positions to help you carry on the work. You can do much along the line of managing your business through channels of promotion. Promote a man on his record, on the qualifications he has demonstrated to you and to the whole organization. When you promote a man, you stimulate every other ambitious man in your whole organization to put forth extra effort to accomplish results that will entitle him to promotion later on. Do not overlook the proposition of promotion.

When it comes to the promotion of men, it is always well to have a heart-to-heart talk with the man, and give him to understand what goes with promotion—the responsibility and the obligation and the authority and the compensation and the privilege. Those things all go with promotion, and I have had some very sad experiences in promoting men in the past through not going into those details and getting them to fully realize the obligation which goes with the responsibility due to the promotion. If you just promote a man and you do not get all these points before him, he may not realize just what the promotion means. Some men are liable to be carried away a little bit by the authority that goes with the promotion or by the extra privileges that go with a higher position, or by the extra compensation, and they overlook the big thing that is going to make for success—the obligation which they owe to the company as a result of that promotion. So we recommend that in promoting men these facts be made clear to them.

How to Discharge Men

Now, I have outlined four points that we ask our people to keep before them—the employing, the teaching, the supervising and the promoting. And the fifth, of course, is important and it is disagreeable for the supervisors, the matter of discharging men; but I have found in the last several years from my own experience that by giving proper attention to the first four, to the employing, the teaching, the supervising and the promoting of men, we have had to do very little discharging, which is very gratifying. Of course, there are times when we have to let men out of the organization, and there is only one word of advice that anyone can give along that line, and that is to do it in a nice, fair, square way and tell the man the reason why. That is the only explanation that goes with that; but if you will give enough attention to the other four points, you will be troubled very little on the fifth.

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Safety Lamp Glasses

Demand in Canada Increases, Showing Possibility of Establishment of a New Industry

Previous to the war, the miner's safety lamp glasses used in Canada were imported from Germany and Austria, says the Nelson, B.C., *Daily News*. They are made from a special kind of glass having a high resistance against breakage from a blow or sudden change of temperature. The material used in safety lamps must necessarily be of a high quality, as a defective lamp may be the means of causing a mine explosion. The United States was also dependent on enemy countries for supplies of safety lamps and lamp parts, but, through the co-operation of the bureau of standards and the bureau of mines, these are now being manufactured in that country.

The price of safety lamp glasses has increased from \$6.50 per 100, before the war, to nearly \$10 f.o.b. New York. The demand for them in Canada is increasing year by year, and the present requirements are in the neighborhood of 50,000 glasses per annum. There are a number of glass manufacturers in Canada and the production of these glasses would not only prove to be an additional source of profit to the manufacturer, but would also make Canada independent of foreign sources of supply.

Safety lamp glasses and many other imported products now used in Canada may, or may not, have been standardized in Germany, the United States and elsewhere. If it is intended to manufacture these products in Canada it will be necessary, however, to provide some means for guaranteeing their standard of purity. The importance of the subject, and the increasing purchases made by the different departments of the government demonstrate the value of a Canadian national bureau of standards, similar to that of the United States.

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TRADES AND LABOUR BRANCH

NOTICE

The following are the Factory Inspectors for the Province of Ontario:

JAMES T. BURKE, Chief Inspector, Toronto
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H. A. CLARK, Toronto.
MISS M. CARLYLE, Toronto
W. S. FORSTER, Ottawa
A. W. HOLMES, Toronto
ROBT. HUNGERFORD, Toronto
FRED KELLOND, Hamilton
S. J. MALLION, Stratford
MRS. A. BROWN-REDDICK, Toronto
H. J. TUTT, Toronto

Persons having business with any of the Inspectors should communicate with them at the Parliament Bldgs., Toronto.

W. A. RIDDELL, M.A., Ph.D., HON. F. G. MACDIARMID,
Superintendent. Minister of Public Works
and Highways.
Phone Main 5800



Steel Plant on Coast

Arrangements Reported to Have Been Completed for
Establishment of New Enterprise at
New Westminster

When in Ottawa recently, Mayor A. W. Gray, of New Westminster, conducted several interviews with eastern capitalists relative to the establishment of a steel plant on a site near the Royal City, states the *Sydney Post*. The announcement is now made that arrangements have been completed whereby the desired plant will soon be a reality on the coast. A lease has been signed in Ottawa for a tract of land on the Indian Reserve on the North Arm of the Fraser River near New Westminster. The lease covers a period of twenty-one years with privilege of renewing for a further like period. The principals are now on their way to the coast, having left New York a week ago.

By the terms of the agreement work is to be started within the next sixty days, and the company is to commence with an output of fifty tons of steel per day, this to be increased later to one hundred tons. The product of the plant will consist of steel billets, rods, plates, etc., and the electrical process will be used in the manufacturing of them. It is said that the new company is identified with the Tudhope interests, who recently announced their intention of producing on a large scale by the same process.

Increase In Acreage

From 10 to 25 per Cent. More Land Being Sown to Wheat
This Year in the Prairie Provinces

Ample evidence that the farmers in the great grain growing areas between the Great Lakes and the Rockies are responding wholeheartedly to the government's appeal for increased production, is contained in a detailed report of farming operations in Manitoba, Saskatchewan and Alberta, received at the head office of the Canadian Northern Railway in Toronto.

It is pointed out that the late fall of 1917 and the early spring of this year have compensated largely for any shortage in farm labor at this critical time. Recent reports to the Canadian Northern indicated that the new breaking along its lines would be between three-quarters of a million and a million acres, and that sufficient fall plowing had been done to facilitate early operations this year. The report just in from 235 points, shows that up to the week ending April 17th, there was pronounced activity throughout all districts served by the lines of the Canadian Northern in the west. The condition of the ground was given as good, there being not a single complaint in respect to the state of the soil.

The indications are, from this report, that there will be a substantial increase in the acreage sown to wheat along the lines of the C. N. R. in the three prairie provinces. Some estimate this increase as high as 25%, and the lowest percentage given is 10%. Generally, it would appear that the operations for the crop of 1918 have commenced auspiciously.

Legislation is being introduced in British Columbia providing for a bounty on pig iron manufactured in that province. For pig iron manufactured from ore mined in the province a bounty not to exceed \$3.00 per ton is proposed, with a bounty of \$1.50 per ton on pig iron manufactured from ore mined outside of the province. In the proposed legislation it is provided that no bounty will be paid under the Act after December 31, 1923.

TRADES AND LABOUR BRANCH

NOTICE

To Manufacturers, Dealers, and
Users of Steam Boilers

All steam boilers built in, or entering the Province of Ontario, and boilers exchanged or repaired, are subject to Government Inspection as prescribed in the Steam Boilers Act, 3 George V., C. 61.

Before any work of repair or alteration is commenced on any boiler, notice must be sent to the Department stating the nature and extent of the repairs or alterations proposed to be made. If the Chief Inspector should consider such repairs or alterations of an extensive character, the boiler must be inspected in accordance with the Regulations by an Inspector authorized under the Act.

All communications should be addressed to the Steam Boiler Branch, Department of Public Works, Parliament Bldgs., Toronto.

HON. F. G. MACDIARMID, D. M. MEDCALF,
Minister of Public Works. Chief Inspector of Steam Boilers.

W. A. RIDDELL, M.A., Ph.D., Superintendent.



TRADES AND LABOUR BRANCH

NOTICE

TO STATIONARY AND HOISTING ENGINEERS

Everyone operating a STATIONARY steam plant of 50 h.p. or over in the Province of Ontario must hold a Stationary Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Everyone operating a HOISTING steam plant working at a pressure of 20 pounds or over irrespective of horse power, and used for hoisting in structural operations or excavating purposes, in the Province of Ontario, must hold a Hoisting Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Application forms for obtaining STATIONARY or HOISTING Engineers' Certificates, may be had upon applying to the Chairman.

HON. F. G. MACDIARMID, W. C. MCGHIE,
Minister of Public Works and Highways. Chairman of Board.

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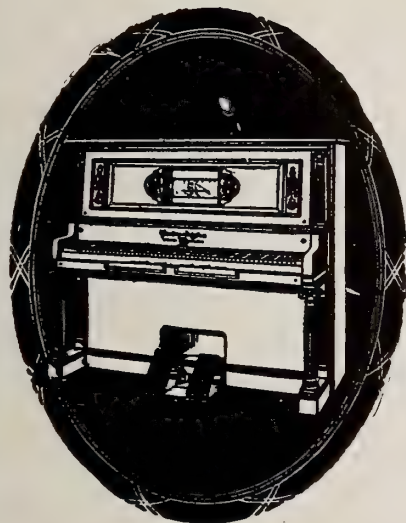
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Buyers' Guide to Canadian Manufactures

A List of Articles which will Enable the Purchaser to Know the Manufacturers of Made-in-Canada Goods. For Rates of Insertion in this Department write to the Advertising Manager of "Industrial Canada," Toronto

ABRASIVE MATERIALS

- *Canadian Hart Wheels, Ltd., Hamilton, Ont.
- *Dominion Abrasive Wheel Co., New Toronto, Ont.

ABRASIVES

- *D. A. Brebner, Ltd., Toronto.

ACCOUNT BOOKS

- *The Brown Bros., Ltd., Toronto.

ACETYLENE BURNERS

- *The Prest-O-Lite Company.

ACETYLENE GAS

- *The Prest-O-Lite Company.

ACETYLENE GAS BURNERS

- Economic Acetylene Burner Co., Toronto.

ACIDS

- *The Grasselli Chemical Co., Ltd., Toronto.
- *The Nichols Chemical Co., Ltd., Montreal.

ADVERTISING NOVELTIES

- Lawson & Jones, Ltd., London, Ont.

AERATED BEVERAGES

- Charles Gurd & Co., Ltd., Montreal, Que.

AIR COMPRESSORS

- *Canadian Ingersoll-Rand Co., Montreal, Que.
- *Smart-Turner Machine Co., Ltd., Hamilton, Ont.

AIR DRILLS

- *Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

ALCOHOL

- *Hiram Walker & Sons, Limited, Walkerville, Ont.

ALE

- E. L. Drewry, Winnipeg, Man.

ALUMINUM

- *Northern Aluminum Co., Ltd., 1805 Traders Bank, Toronto.

ALUMINUM CASTINGS

- *Tallman Brass & Metal Co., Hamilton, Ont.

AMMONIA

- Canadian Ammonia Co., Ltd., Toronto.

ANGLE BARS

- *Burlington Steel Co., Ltd., Hamilton, Ont.
- *Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.
- *The Steel Company of Canada, Limited, Hamilton, Ont.

ASBESTOS

- *Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEATHING

- *Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEET AND PISTON PACKINGS

- *Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS STEAM PIPE AND BOILER COVERINGS

- *Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS TEXTILES

- *Eureka Mineral Wool & Asbestos Co., Toronto.

ATTACHMENT PLUGS

- *Crouse-Hinds Co., Ltd., Toronto.

AUTOGRAPHIC REGISTERS

- *Autographic Register Co., Ltd., Montreal.

AUTOGRAPHIC REGISTER SYSTEMS

- Business Systems, Ltd., Toronto.

AUTOMATIC SCREW MACHINE PRODUCTS

- *United Brass & Lead, Ltd., Toronto.

AUTOMOBILE ACCESSORIES

- *Northern Electric Co., Limited, Montreal.

AUTOMOBILE PARTS

- *Tallman Brass & Metal Co., Hamilton, Ont.

AUTOMOBILE FORGE & STAMPING CO.

- Walkerville, Ont.

AUTOMOBILE PARTS

- *United Brass & Lead, Ltd., Toronto.

AWNING CORD (cotton)

- Hamilton Cotton Co., Hamilton, Ont.

AXLES

- Canada Forge Co., Ltd., Welland, Ont.

- Guelph Spring & Axle Co., Ltd., Guelph, Ont.

- AXLES, carriage and automobile Guelph Spring & Axle Co., Ltd., Guelph, Ont.

BABBITT METAL

- Alonzo W. Spooner, Limited, Port Hope, Ont.

- *Dominion Metal Co., Ltd., Sherbrooke, P.Q.

- *The Canada Metal Co., Toronto.

- *Tallman Brass & Metal Co., Hamilton, Ont.

BACON

- E. W. Fearman Co., Ltd., Hamilton, Ont.

BAGS

- *Scythes & Co., Ltd., Toronto.

BAGS, Cotton

- The Canadian Bag Co., Ltd., Montreal, Que.

BAGS, jute

- The Canadian Bag Co., Ltd., Montreal, Que.

- *Scythes & Co., Ltd., Toronto.

BAGS, travelling

- J. Eveleigh & Co., Ltd., Montreal, Que.

- Lamontagne, Ltd., Montreal, Que.

- The M. Langmuir Mfg. Co., of Toronto, Ltd., Toronto.

BAKING JAPAN

- *Berry Bros., Ltd., Winnipeg, Man.

BAND RESAWS

- *Canada Machinery Corporation, Limited, Galt, Ont.

- *P. B. Yates Machine Co., Ltd., Hamilton, Ont.

BAND SAWS

- *E. C. Atkins & Co., Inc., Hamilton, Ont.

BANK AND OFFICE RAILINGS

- *The Geo. B. Meadows, Toronto, Wire, Iron & Brass Works Co., Ltd., Toronto.

- *Canada Wire and Iron Works, Hamilton, Ont.

BANK FITTINGS

- The Canadian Office & School Furniture Co., Ltd., Preston, Ont.

BANK RAILINGS AND CAGES

- *Canada Wire and Iron Goods Co., Hamilton, Ont.

- *Dennis Wire & Iron Works Co., London.

BANK SIGNS AND FITTINGS

- *Tallman Brass & Metal Co., Hamilton, Ont.

- BARRELS, steel, and containers *Smart-Turner Machine Co., Ltd., Hamilton, Ont.

BARS, iron

- London Rolling Mill Co., Limited, London, Ont.

BARS, steel

- London Rolling Mill Co., Limited, London, Ont.

BASEBALL GOODS

- A. J. Reach Co., Brantford, Ont.

BATHS, enamelled

- Amherst Foundry Co., Ltd., Amherst, N.S.

BATTERIES, dry

- The Canadian National Carbon Co., Ltd., Toronto.

- Canadian Carbon Company, Ltd., Toronto.

BEARINGS

- *The Chapman Double Ball Bearing Co., Ltd., Toronto.

- *The Goldie & McCulloch Co., Ltd., Galt, Ont.

- *Tallman Brass & Metal Co., Hamilton, Ont.

- *United Brass & Lead, Ltd., Toronto.

BEARINGS, pillow block and up-right

- *Dodge Mfg. Co., Ltd., Toronto.

- *The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEARINGS

- *The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEDS, camp folding

- *Otterville Mfg. Co., Ltd., Otterville, Ont.

BEEF

- E. W. Fearman Co., Ltd., Hamilton, Ont.

BEER

- E. L. Drewry, Winnipeg, Man.

BELTING, chains

- *Canadian Link-Belt Co., Toronto.

- *Dodge Mfg. Co., Ltd., Toronto.

- *The Goldie & McCulloch Co., Ltd., Galt, Ont.

BELTING, elevator

- *Canadian Consolidated Rubber Co., Ltd., Montreal, Que.

- Dunlop Tire & Rubber Goods Co., Ltd., Toronto.

BELTING, leather

- The Beardmore Belting Co., Ltd., Toronto.

- *J. L. Goodhue & Co., Danville, P.Q.

- *Sadler & Howarth, Montreal.

- *The D. K. McLaren Belting Co., Ltd., Montreal.

- *The J. C. McLaren Belting Co., Ltd., Montreal.

BELTING, rubber

- *Canadian Consolidated Rubber Co., Ltd., Montreal, Que.

- *Dunlop Tire & Rubber Goods Co., Ltd., Toronto.

- *Gutta Percha & Rubber, Limited, Toronto.

BELTING, stitched cotton duck

- *Dominion Belting Co., Ltd., Hamilton.

BENT GOODS

- The Crown Lumber Co., Woodstock, Ont.

BICYCLES AND ACCESSORIES

- *Canada Cycle and Motor Co., Ltd., Toronto.

BISCUITS

- The Montreal Biscuit Co., Montreal, Que.

BLACK SHEETS

- *A. C. Leslie & Co., Montreal.

BLANKETS

- Slingsby Mfg. Co., Ltd., Brantford, Ont.

- J. Walsham & Son, Ltd., Bolton, Ont.

- J. Walsham & Son, Limited, Bolton, Ont.

BLASTING ACCESSORIES

- Canadian Explosives, Ltd., Montreal, Que.

BLEACHING POWDER

- Canadian Salt Co., Ltd., Windsor, Ont.

BLOWERS

- *Sheldons, Ltd., Galt, Ont.

- *The Canadian Blower & Forge Co., Limited, Kitchener, Ont.

- BOARDS, wood, binder, fibre specialties

- *Beveridge Paper Co., Limited, Montreal.

BOATS OF ALL KINDS

- Peterboro Canoe Co., Ltd., Peterboro, Ont.

BOILER COMPOUND and OILS

- Electric Boiler Compound Co., Ltd., Guelph, Ont.

BOILER PRESERVATIVES

- *Beveridge Paper Co., Limited, Montreal.

BOILERS

- *M. Beatty & Sons, Ltd., Welland, Ont.

- *Darling Bros., Montreal.

- *Goldie & McCulloch Co., Limited, Galt, Ont.

- John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

- *Polson Iron Works, Ltd., Toronto.

- J. & R. Weir, Montreal, Que.

- Taylor-Forbes Co., Ltd., Guelph, Ont.

- *The Watrous Engine Works Co., Ltd., Brantford.

- BOILERS, hot water or steam. Steel & Radiation, Ltd., Toronto.

- Warden King, Ltd., Montreal, Que.

- BOILERS, steam. Jenckes Machine Co., Sherbrooke, Que.

- *The Goldie & McCulloch Co., Ltd., Galt, Ont.

- Steel and Radiation Ltd., Toronto.

- Warden King, Ltd., Montreal, Que.

- *The Watrous Engine Works Co., Ltd., Brantford, Ont.

- BOILERS, steam and brass work *The Watrous Engine Works Co., Ltd., Brantford, Ont.

BOILER STANDS

- Anthes Foundry Ltd., Toronto.

BOLSTERS

- *Canadian Car & Foundry Co., Ltd., Montreal, Que.

BOLTS

- *The National Acme Mfg Co., Montreal, Que.

- *United Brass & Lead, Ltd., Toronto

BOLTS AND NUTS

- *The Canadian Tube & Iron Co., Ltd., Montreal, Que.

- *The Steel Company of Canada, Limited, Hamilton, Ont.

- Starr Mfg. Co., Ltd., Dartmouth, N.S.

- *United Brass & Lead, Ltd., Toronto

BOOKBINDERS

- R. G. McLean, Toronto.

- *The Brown Bros., Ltd., Toronto.

BOOKCASES

- *Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

- BOOKCASES, sectional (Gunn) The George McLagan Furniture Co., Ltd., Stratford, Ont.

BOOKLETS

- R. G. McLean, Toronto.

BOOKS, blank

- *The Brown Bros., Ltd., Toronto.

BOOTS AND SHOES

- Ames-Holden-McCreedy, Ltd., Montreal, Que.

- J. Leckie Co., Ltd.

- The John Ritchie Co., Ltd., Quebec, Que.

BOXES

- *Crouse-Hinds Co., Ltd., Toronto.

BOXES, cellular board

- *The Thompson & Norris Co. of Canada, Ltd., Niagara Falls.

BOXES, rattle and soap

- The Arlington Co. of Canada, Ltd., Toronto.

BOXES, steel shop

- *Steel Trough and Machine Co., Ltd., Tweed, Ont.

- BOXES and SHOOKS, wooden The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

BOXES, wooden

- G. & J. Esplen, Montreal, Que.

- Barchard & Co., Ltd., Toronto.

BRASS BOLTS AND NUTS

*Tallman Brass & Metal Co., Hamilton, Ont.

*United Brass & Lead, Ltd., Toronto

BRASS AND BRONZE WIRE

*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

BRASS, BRONZE and ALUMINUM LETTERS

*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS ENGRAVERS

Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS FOUNDERS AND FINISHERS

*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.

*Tallman Brass & Metal Co., Hamilton, Ont.

*United Brass & Lead, Ltd., Toronto

BRASS GOODS

*Penberthy Injector Co., Ltd., Windsor.

*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.

*Mueller Mfg. Co., Sarnia.

The Garth Co., Montreal, Que.

The James Morrison Brass Mfg. Co., Ltd., Toronto.

*The Kerr Engine Co., Ltd., Walkerville, Ont.

*Tallman Brass & Metal Co., Hamilton, Ont.

*United Brass & Lead Ltd., Toronto.

BRASS PLATES

Geo. Booth & Son., Toronto.

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BRASS RODS, SHEETS AND PLATES

*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

BRASS SIGNS AND MEMORIALS

*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS TUBING, seamless

Canadian Seamless Wire Co., Ltd., Toronto.

*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WIRE

Canadian Seamless Wire Co., Ltd., Toronto.

*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WORK, church

Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS WORK, special

Bawden Machine Co., Ltd., Toronto.

*H. Mueller Mfg. Co., Ltd., Sarnia, Ont.

*Tallman Brass & Metal Co., Hamilton, Ont.

*Booth-Coulter Copper & Brass Co., Ltd., Toronto.

*The Watrous Engine Works Co., Ltd., Brantford, Ont.

*United Brass & Lead, Ltd., Toronto

BRICK

National Brick Co. of Laprairie, Laprairie, P.Q.

Port Credit Brick Co., Port Credit.

BRICK, enamel

National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, pressed

National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, rubbing

*Canadian Hart Wheels, Limited, Hamilton, Ont.

BRICK, sewer

National Brick Co. of Laprairie, Laprairie, P.Q.

BRIDGES, Railway and Highway

*Dominion Bridge Co., Montreal.

*Hamilton Bridge Works Co., Ltd., Warkville, Ont.

*The Canadian Bridge Co., Ltd., Hamilton, Ont.

*McGregor & McIntyre, Ltd., Toronto.

*Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.

*Manitoba Bridge & Iron Works, Ltd., Winnipeg.

BROOMS

Simms, T. S. & Co., Limited, St. John, N.B.

Stevens-Hepner Co., Limited, Port Elgin, Ont.

BRONZE, SHEETS, RODS, PLATES

*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

BRUSHES

Simms, T. S. & Co., Limited, St. John, N.B.

Stevens-Hepner Co., Limited, Port Elgin, Ont.

BRUSHES, carbon

Canadian National Carbon Co., Ltd., Toronto.

BUCKET TANKS

*Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.

*The Bennett & Wright Co., Ltd., Toronto, Ont.

BUCKLES, shoe and coat

Parmenter & Bulloch Co., Limited, Gananoque, Ont.

BUILDING BLOCKS, vitrified, salt glazed

Standard Clay Products, Ltd., St. Johns, Que.

BUILDING FELT and PAPER

*Eureka Mineral Wool & Asbestos Co., Toronto.

*The Barrett Co., Ltd., Toronto and Montreal.

BUILDERS, ship

*Polson Iron Works, Limited, Toronto.

J. & R. Weir, Montreal, Que.

BURLAPS

The Canadian Bag Co., Limited, Montreal, Que.

*Scythes & Co., Ltd., Toronto.

BURLAPS, decorative

Dominion Oil Cloth Co., Limited, Montreal, Que.

CABLE ACCESSORIES

*Crouse-Hinds Co., Ltd., Toronto.

CABLES, electric light, power, telephone and telegraph

*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

CABLES, transmission and telephones

*Eugene F. Phillips Electrical Works, Ltd., Montreal, Que.

CABLES, Transmission and Cable

*Northern Electric Co., Limited, Montreal, Que.

CABLES, wire

The Dominion Wire Rope Co., Ltd., Montreal, Que.

*The B. Greening Wire Co., Ltd., Hamilton, Ont.

CALENDARS, ADVERTISING NOVELTIES, etc.

Lawson & Jones, Limited, London, Ont.

CAMERAS

Canadian Kodak Co., Limited, Toronto.

CAMPERS' OUTFITTERS

Slingsby Mfg. Co., Ltd., Brantford, Ont.

CANADA SILVER

*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

CANOEES

Peterboro Canoe Co., Ltd., Peterboro, Ont.

*Canadian Canoe Co., Ltd., Peterborough.

CANS, baking powder, etc.

American Can Co., Montreal and Hamilton.

A. R. Whittall Can. Co., Ltd., Montreal.

CANS, fruit

American Can Co., Montreal and Hamilton.

A. R. Whittall Can. Co., Ltd., Montreal.

CANS, iron, lead and putty

A. R. Whittall Can. Co., Ltd., Montreal.

CANS, ROVING, ETC., fibre

*Beveridge Paper Co., Limited, Montreal.

CANS, tin

A. R. Whittall Can. Co., Ltd., Montreal.

American Can Co., Montreal and Hamilton.

CANVAS

*Scythes & Co., Ltd., Toronto.

CAPS, cloth

John W. Peck & Co., Ltd., Montreal, Que.

CARBIDE

*Canada Carbide Co., Ltd., Montreal, Que.

*Union Carbide Co. of Canada, Ltd. Works, Welland, Ont. Head Office, Toronto.

CARBON BRUSHES

Canadian Carbon Co., Limited, Toronto.

CARBON PRODUCTS

Canadian Carbon Co., Limited, Toronto.

CARBONS, arc light

Canadian Carbon Co., Limited, Toronto.

The Canadian National Carbon Co., Ltd.

CARBONS, flame

Canadian Carbon Co., Limited, Toronto.

CARBONS (headlight)

*Crouse-Hinds Co., Ltd., Toronto.

CARBONIC ACID GAS

Canadian Carbonate Co., Montreal.

CARD RECORD SYSTEMS

*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

CARPETS AND RUGS

Toronto Carpet Mfg. Co., Limited, Toronto.

CARPETS AND RUGS, Axminster and ingrain

Toronto Carpet Mfg. Co., Limited, Toronto.

CARPETS AND RUGS, Brussels and Wilton

Toronto Carpet Mfg. Co., Limited, Toronto.

CARPET YARNS, worsted and wool

Toronto Carpet Mfg. Co., Limited, Toronto.

CARRIAGES, baby, etc.

Canada Furniture Manufacturers, Ltd., Woodstock, Ont.

CARRIERS

*Richards-Wilcox Canadian Co., Limited, London, Ont.

CARRIERS, box and barrel

*Canadian Mathews Gravity Carrier

CARRIERS, brick

*Canadian Mathews Gravity Carrier Co., Limited, Toronto.

*Richards-Wilcox Canadian Co., Ltd., London, Ont.

CARS

*Canadian Car & Foundry Co., Ltd., Montreal, Que.

*National Steel Car Co., Limited, Hamilton, Ont.

CARS, industrial

Hammant Steel Car and Engineering Works, Hamilton.

CARTONS, lithographed

Harris Lithographing Co., Toronto.

CASTINGS

*Tallman Brass & Metal Co., Hamilton, Ont.

CASTINGS, aluminum

*Booth-Coulter Copper & Brass Co., Limited, Toronto.

*Crouse-Hinds Co., Ltd., Toronto.

*United Brass & Lead, Ltd., Toronto

CASTINGS, brass

*Booth-Coulter Copper & Brass Co., Limited, Toronto.

*Crouse-Hinds Co., Ltd., Toronto.

*Tallman Brass & Metal Co., Hamilton, Ont.

*United Brass & Lead, Ltd., Toronto

CASTINGS, brass and bronze

*Tallman Brass & Metal Co., Hamilton, Ont.

*United Brass & Lead, Ltd., Toronto

CASTINGS, grey iron

*Canadian Rumely Co., Limited, Toronto, Ont.

*Crouse-Hinds Co., Ltd., Toronto.

*Dodge Mfg. Co., Toronto.

*Canadian Car & Foundry Co., Ltd., Montreal, Que.

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.

John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

CASTINGS, malleable iron

*Crouse-Hinds Co., Ltd., Toronto.

*Galt Malleable Iron Co., Ltd., Galt, Ont.

CASTINGS, steel

*Canadian Steel Foundries, Ltd., Montreal, Que.

*Dominion Steel Foundry Co., Ltd., Hamilton, Ont.

*Hull Iron and Steel Foundry, Ltd., Hull, P.Q.

*Wm. Kennedy & Sons, Ltd., Owen Sound.

CATALOGUE MAKERS

Grip, Ltd., Toronto.

CAUSTIC SODA

Canadian Salt Co., Ltd., Windsor, Ont.

CELLBOARD

Adams Cellboard Co., Toronto, Ont.

CEMENT GUNS

Steel and Radiation, Ltd., Toronto.

CEMENT, HIGH TEMPERATURE

*Beveridge Paper Co., Ltd., Montreal.

CHAINS, for elevators, conveyors and drives

*Canadian Link-Belt Co., Toronto.

CHAIRS

*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

CHAIRS, assembly hall

Stratford Mfg. Co., Ltd., Stratford, Ont.

CHAIRS, folding

Stratford Mfg. Co., Ltd., Stratford, Ont.

CHAIRS, rattan and upholstered

Imperial Rattan Co., Ltd., Stratford, Ont.

CHAIR SEATS, fibre

*Beveridge Paper Co., Limited, Montreal.

CHECKS, swing checks, etc

*Mueller Mfg. Co., Ltd., Sarnia.

CHEMICALS

*The Grasselli Chemical Co., Ltd., Toronto.

*The Nichols Chemical Co., Ltd., Montreal, Que.

CHEMICAL LABORATORY APPARATUS

The Geo. M. Hendry Co., Limited, Toronto.

CHEMISTS, INDUSTRIAL

*Milton Hersey Co., Montreal.

CHICLETS and CHEWING GUM

Canadian Chewing Gum Co., Ltd., Toronto.

CIGARETTES and TOBACCO

Philip Morris & Co., Limited, Montreal, Que.

CIRCULAR CUTTERS, solid steel

*Galt Knife Co., Ltd.

The Peter Hay Knife Co., Limited, Galt, Ont.

CIRCULAR SAWS

*E. C. Atkins & Co., Inc., Hamilton, Ont.

CLAM SHELL BUCKETS

*M. Beatty & Sons, Ltd., Welland, Ont.

CLOCKS, TIME

*International Business Machines, Limited, Toronto.

CLOCKS, WATCHMEN'S

*The Bennett & Wright Co., Ltd., Toronto, Ont.

CLOSET SEATS

*Goderich Organ Co., Goderich, Ont.

CLOTHING

John W. Peck & Co., Ltd., Montreal, Que.

Mackenzie & Co., Ottawa, Ont.

CLOTHING, leather and sheepskin lined coats

*A. R. Clarke & Co., Ltd., Toronto.

CLOTHING, Mackinaw

The Carss Mackinaw Clothing Co., Ltd., Orillia, Ont.

CLOTHES LINES, cotton

Hamilton Cotton Co., Hamilton, Ont.

CLUTCHES

*Dodge Mfg. Co., Ltd., Toronto.

CLUTCHES, conveyors

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

COAL

*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.

Standard Fuel Co., Toronto.

COAL CUTTERS

*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

COBALT OXIDE

The Coniagas Reduction Co., Ltd., St. Catharines, Ont.

COMBS, fine dressing and name
The Arlington Co. of Canada, Ltd.
Toronto.

COMMERCIAL STATIONERY
*Brown Bros., Ltd., Toronto.

CONCRETE COATINGS, PAINTS, ETC.
*Beveridge Paper Co., Ltd., Montreal.

*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
The Imperial Varnish & Color Co. Limited, Toronto.

CONDUITS FOR INTERIOR WIRING
*Conduits Company Ltd. Toronto.

CONDUIT BOX FITTINGS
*Crouse-Hinds Co., Ltd., Toronto.

CONDUITS (Marine)
*Crouse-Hinds Co., Ltd., Toronto.

CONFECTIONERY
Ganong Bros., Ltd., St. Stephens, N.B.
Moirs, Limited, Halifax, N.S.
The Montreal Biscuit Co., Montreal, Que.

CONTAINER BOARD—strong container
Bathurst Lumber Co., Ltd., Bathurst, N.B.

CONTRACTOR'S PLANT
*M. Beatty & Sons, Ltd., Welland, Ont.
*Canadian Allis-Chalmers, Limited, Toronto.

CONVEYORS
*Canadian Link-Belt Co., Toronto.
*Canadian Mathews Gravity Carrier Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.

COPPER
*Eugene F. Phillips, Electrical Works, Limited, Montreal.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

COPPER, SHEETS, PLATES, BARS, RODS
*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

COPPER SHEETS AND PLATES
*Booth-Coulter Copper & Brass Co., Limited, Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

COPPERSMITHS
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

COPPER TUBING, seamless
Canadian Seamless Wire Co., Ltd., Toronto.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

COPPER WIRE
Canadian Seamless Wire Co., Ltd., Toronto.
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

CORKS
S. H. Ewing & Sons, Montreal, Que.

CORK CARPET
Dominion Oil Cloth Co., Ltd., Montreal, Que.

CORRUGATED PAPER BOXES
Adams Cellboard Co., Toronto.
Corrugated Paper Box Co., Ltd., Toronto.
*Hinde & Dauch Paper Co., Toronto.
*Martin Corrugated Paper & Box Co., Limited, Toronto.
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.

CORUNDUM, artificial
*D. A. Brebner, Ltd., Toronto.

CORSETS
Dominion Corset Co., Quebec, Que.

COTTONS
*Dominion Textile Co., Limited, Montreal, Que.
*Montreal Cottons, Ltd., Valleyfield, P.Q.

COTTONADES
Hamilton Cotton Co., Hamilton, Ont.

COUPLERS
*Canadian Steel Foundries, Ltd., Welland, Ont.

COUPLINGS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Dodge Mfg. Co., Ltd., Toronto.

CRANES
*Northern Crane Works, Walkerville, Ont.

CRANKSHAFTS
Canada Forge Co., Ltd., Welland, Ont.

CREAM CHEESE, Ingersoll
The Ingersoll Packing Co., Limited, Ingersoll, Ont.

CREAM SEPARATORS AND MILK CLARIFIERS
De Laval Dairy Supply Co., Peterboro, Ont.
The Renfrew Machinery Co., Ltd., Renfrew, Ont.

CREAMERY AND CHEESE FACTORY MACHINERY AND SUPPLIES
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

CREOSOTED MATERIALS
*Paterson Mfg. Co., Toronto and Montreal.

CRUSHED STONE
The Hagersville Contracting Co., Limited, Hagersville, Ont.

CRUSHING ROLLS
*Jenckes Machine Co., Sherbrooke, Que.

CUPOLAS
*Sheldons, Ltd., Galt, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

CUPS, presentation
Standard Silver Co., Toronto.

CUPS, grease and oil
*The Canadian Winkley Co., Ltd., Windsor, Ont.

CURLED HAIR
*Delany and Pettit, Ltd., Toronto.

CURTAINS, chenille
Hamilton Cotton Co., Hamilton, Ont.

CUTLERY
Standard Silver Co., Toronto.

CUTTERS, (Machine)
*Pratt & Whitney Co., Dundas.

DECK PLUGS (electric marine)
*Crouse-Hinds Co., Ltd., Toronto.

DENIMS
Hamilton Cotton Co., Hamilton, Ont.

DERAILS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

DESIGNERS
Ontario Engraving Co., Hamilton, Ont.

DESIGNERS and PRINTERS OF BOOKLETS, ETC.
Grip, Ltd., Toronto.

DESKS
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

DESSICATED VEGETABLES
Grahams Limited, Belleville.

DIES
*John Whitfield Co., Toronto.

DINING ROOM SUITES
The George McLagan Furniture Co., Limited, Stratford, Ont.

DIES
*Butterfield & Co., Rock Island, P.Q.
*Pratt & Whitney Co., Dundas.

DISINFECTING APPARATUS
Spramotor Co., London, Ont.

DOOR HANGERS
*Richards Wilcox Canadian Co., Ltd., London, Ont.

DREDGES
*M. Beatty & Sons, Limited, Welland, Ont.

DRESSING, belt
Sadler & Haworth, Montreal, Que.

DRESS AND CLOAK TRIMMINGS
J. Henry Peters Co., 1 Mincing St., Toronto.

DRIFT BOLT DRIVERS
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

DRILL PRESSES
*Canada Machinery Corporation, Limited, Galt, Ont.

DRILL SHARPENERS
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

DRILLS
*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.
*Pratt & Whitney Co., Dundas.

DRILLS, core
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

DRILLS, pneumatic
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

DRILLS, rock
*Canadian Ingersoll Rand Co., Montreal, Que.

DRIFT BOLTS OR SPIKES
London Rolling Mill Co., Limited, London, Ont.

DROP FORGINGS
*Canadian Billings & Spencer, Ltd., Welland, Ont.

DROP HAMMERS
*Canada Machinery Corporation, Limited, Galt, Ont.

DRUMS, steel, and containers
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

DRY CELLS, electric
Canadian Carbon Co., Limited, Toronto.

DRY COLORS
P. D. Dods & Co., Ltd., Montreal.
The Imperial Varnish & Color Co., Limited, Toronto.
R. C. Jamieson & Co., Ltd., Montreal, Que.
Standard Paint & Varnish Co., Ltd., Windsor, Ont.

DUMB WAITERS
Turnbull Elevator Mfg. Co., Toronto.

DURABLE WIRE ROPE
The Dominion Wire Rope Co., Ltd., Montreal, Que.

DYNAMITE
Canadian Explosives, Limited, Montreal, Que.

DYNAMOS
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines, Ont.

DYNAMOS, plating
*Jones & Moore Electric Co., Ltd., Toronto.

EIDERDOWN
Galt Knitting Co., Ltd., Galt.

ELECTRIC APPLIANCES
*Canadian Crocker-Wheeler Co., Limited, St. Catharines, Ont.
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.

ELECTRIC APPLIANCES, fibre, all purposes
*Beveridge Paper Co., Limited, Montreal.

ELECTRICAL COMPOUNDS
Standard Paint Co. of Canada, Ltd., Montreal, Que.

ELECTRIC COOKING APPLIANCES
*Canadian General Electric Company, Ltd., Toronto.

ELECTRIC LAMPS
Packard Electric Co., Limited, Toronto.

ELECTRIC PLATE WARE
Roden Bros., Ltd., Toronto.

ELECTRIC BATTERIES
Canadian Carbon Co., Limited, Toronto.

ELECTRIC BRANDING TOOLS
*The Clemens Electrical Corporation of Canada, Ltd., Hamilton, Ont.

ELECTRIC RAILWAY EQUIPMENT
*Crouse-Hinds Co., Ltd., Toronto.

ELECTROPLATING
*United Brass & Lead, Ltd., Toronto.

ELECTRO PLATING
Central Press Agency, Toronto.

ELECTRICAL SUPPLIES
*Canadian General Electric Company, Ltd., Toronto.
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
*Jones & Moore Electric Co., Ltd., Toronto.
*Northern Electric Co., Limited, Montreal, Que.

ELECTRIC SOLDERING IRON
*The Clemens Electrical Corporation of Canada, Ltd., Hamilton, Ont.

ELECTRO-SILVER PLATED WARE
Standard Silver Co., Toronto.

ELEVATING MACHINERY
*Canadian Link-Belt Co., Toronto.
*Canadian Mathews Gravity Carrier Co., Toronto.

ELEVATORS
*Jenckes Machine Co., Sherbrooke, Que.
*Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.
Turnbull Elevator Manufacturing Company, Toronto.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

ELEVATORS FOR ALL PURPOSES
*The Waterous Engine Works Co., Limited, Brantford, Ont.

ELEVATOR GATES AND DOORS
Turnbull Elevator Mfg. Co., Ltd., Toronto.

ELEVATOR GUARDS
*The Geo. B. Meadows, Toronto Iron and Brass Goods Works Co., Limited, Toronto.
*Canada Wire and Iron Works, Hamilton, Ont.

ELEVATORS, hydraulic and electric
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

EMERY DRESSERS and STANDS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

EMERY GRINDERS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

EMERY WHEELS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

EMERY WHEEL GUARDS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

ENAMELS
R. C. Jamieson & Co., Limited, Montreal, Que.
The Imperial Varnish & Color Co., Ltd., Toronto.

ENAMEL MANUFACTURERS AND DECORATORS
Standard Paint & Varnish Co., Ltd., Windsor, Ont.

ENAMEL AND TIN WARE
McClary Mfg. Co., London, Ont.

ENGINES
*E. Leonard & Sons, London, Ont.
*Goldie & McCulloch Co., Limited, Galt, Ont.
J. & R. Weir, Montreal, Que.
*Jenckes Machine Co., Sherbrooke, Que.
*Polson Iron Works, Limited, Toronto.
*Sheldons, Ltd., Galt, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

ENGINES, gas and gasoline
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Hamilton Motor Works Ltd., Hamilton.

ENGINES, gasoline, tractor, plowing and threshing
*Massey-Harris Co., Ltd., Toronto.

ENGINES, hoisting
*M. Beatty & Sons, Welland, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

ENGINES, oil, gasoline and kerosene
*Golson Manufacturing Co., Ltd., Guelph.

ENGINES, steam plowing and threshing
Sawyer-Massey Co., Limited, Hamilton, Ont.

ENGRAVERS
Grip, Limited, Toronto.
Ontario Engraving Co., Hamilton.

ELECTRICAL AND GAS FIXTURES
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Limited, Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.

ELECTRIC HEATING APPLIANCES
*Canadian General Electric Company, Ltd., Toronto.

ELEVATORS
*Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.

ENGRAVERS, half-tone
Grip, Limited, Toronto.
Ontario Engraving Co., Hamilton, Ont.

ENGRAVERS, wood
Ontario Engraving Co., Hamilton, Ont.

ENGRAVERS AND PRINTERS steel plate
American Bank Note Co., Ottawa, Ont.

ENGRAVERS AND PRINTERS banknote
American Bank Note Co., Ottawa, Ont.

ENGRAVING
*J. L. Jones Engraving Company, Toronto.

ENGRAVING, copper and steel plate
Pritchard-Andrews Co. of Ottawa Limited, Ottawa, Ont.

ENSILAGE AND STRAW CUTTERS
J. Fleury's Sons, Aurora, Ont.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

EVAPORATED APPLES
Grahams Limited, Belleville.

ENVELOPES
Barber-Ellis Co., Ltd., Toronto.
Canada Envelope Co., Montreal, Que.

EXCELSIOR
*Delany & Pettit, Ltd., Toronto.

EXCELSIOR PADS

*Delany & Pettit, Ltd., Toronto.
 *Parmenter & Bulloch Co., Limited,
 Gananoque, Ont.

EXPERTS IN PATENT CAUSES

Ridout & Maybee, Toronto.

EXPLOSIVES, high

Canadian Explosives Ltd., Montreal.

FACE PLATE JAWS

Ker & Goodwin, Brantford, Ont.

FACTORY SUPPLIES, cheese and

creamery
 De Laval Dairy Supply Co., Ltd.,
 Montreal, Que.

FANS

*Sheldons, Limited, Galt, Ont.
 *The Canadian Blower & Forge Co.,
 Limited, Kitchener, Ont.

FASTENERS, belt

*Sadler & Haworth, Montreal, Que.

FELTS, pulp and paper makers

Ayers Limited, Lachute Mills, P.Q.

*Beveridge Paper Co., Limited
 Montreal.

FENCES AND GATES

*Dennis Wire & Iron Works Co.,
 London, Ont.

*Canada Wire and Iron Works,
 Hamilton, Ont.

FENCING AND GATES, woven

wire

*Canada Wire and Iron Goods Co.,
 Hamilton, Ont.

FENCING, wire

C. H. Johnson & Sons, Limited,
 Montreal, Que.

FIBRE PAIS

*The E. B. Eddy Co., Ltd., Hull,
 Que.

FIBRE, VULCANIZED, hard and

flexible

*Beveridge Paper Co., Limited,
 Montreal.

FILES

Henry Disston & Sons, Limited,
 Toronto.

*The Nicholson File Co., Port Hope.

FILING CABINETS

*Office Specialty Co., Newmarket.

FILING EQUIPMENT, wood & steel

*Office Specialty Mfg. Co., Ltd.,
 Newmarket, Ont.

FILING SYSTEMS

*Office Specialty Mfg. Co., Ltd.,
 Newmarket, Ont.

FILTER PAPERS

*Beveridge Paper Co., Limited,
 Montreal.

FIRE ALARMS

*Northern Electric Co., Limited,
 Montreal, Que.

FIRE APPARATUS

*R. S. Bickle Co., Woodstock, Ont.

FIRE BRICK

Dominion Fire Brick and Clay Pro-
 ducts, Ltd., Moose Jaw

FIRE BRICK AND CEMENT

*Beveridge Paper Co., Ltd., Mon-
 treal.

FIRE BRICK AND CLAY

The Dominion Fire Brick and Clay
 Products, Ltd., Moose Jaw, Sask.

FIRE BRICK, JOINTLESS

*Beveridge Paper Co., Ltd., Mont-
 real.

FIRE DOOR HARDWARE

*Richards Wilcox Canadian Co.,
 Limited, London, Ont.

FIRE DOORS

*A. B. Ormsby Co., Ltd., Toronto.

*The Pedlar People Limited,
 Oshawa.

FIRE ENGINES

*R. S. Bickle Co., Woodstock, Ont.

Waterous Engine Works Co., Lim-
 ited, Brantford, Ont.

FIRE ESCAPES

*Canada Wire and Iron Goods Co.,
 Hamilton, Ont.

*Dennis Wire & Iron Works Co.,
 London, Ont.

*McGregor & McIntyre, Ltd., To-
 ronto.

FIRE EXTINGUISHERS

*A. B. Ormsby Co., Ltd., Toronto.

*Booth-Coulter Copper and Brass
 Co., Limited, Montreal, Que.

*The Bennett & Wright Co., Ltd.,
 Toronto, Ont.

FIRE FIGHTING APPARATUS

*The Waterous Engine Works Co.,
 Limited, Brantford, Ont.

FIRE HOSE

*Canadian Consolidated Rubber
 Co., of Canada, Limited, Montreal,
 Que.

Dunlop Tire & Rubber Goods Co.,
 Ltd., Toronto.

*Gutta Percha and Rubber, Ltd.,
 Toronto.

FIRE PREVENTION MATERIAL

*Chicago Bridge & Iron Works,
 Bridgeburg, Ont.

*Eureka Mineral Wool & Asbestos
 Co., Toronto.

*The Bennett & Wright Co., Ltd.,
 Toronto, Ont.

FIRE PROOF WINDOWS AND

DOORS

*A. B. Ormsby Co., Ltd., Toronto.

*Pedlar People, Ltd., Oshawa, Ont.

*Trussed Concrete Steel Co. of
 Canada, Limited, Walkerville, Ont.

FIRE SPRINKLER SYSTEMS

*Chicago Bridge & Iron Works,
 Bridgeburg, Ont.

*The Bennett & Wright Co., Ltd.,
 Toronto, Ont.

*Purdy Mansell Co., Toronto.

*H. G. Vogel Co., Montreal, Que.

FIRE AND WATER DEPARTMENT

SUPPLIES

*Chicago Bridge & Iron Works,
 Bridgeburg, Ont.

The Garth Co., Montreal, Que.

FISH, Atlantic Sea-Foods
 Maritime Fish Corporation Ltd.,
 Montreal, Que.

FITTINGS FOR SOIL PIPE

Anthes Foundry, Ltd., Toronto.

FITTINGS, steam

Warden King, Ltd., Montreal, Que.

FIXTURES

*Crouse-Hinds Co., Ltd., Toronto.

FLAGS

*Scythes & Co., Limited, Toronto.

FLASHLIGHTS

Canadian Carbon Co., Toronto.

FLEXIBLE COUPLINGS

*Canadian Bond Hanger & Coup-
 ling Co., Alexandria, Ont.

FLOODLIGHTS (electric)

*Crouse-Hinds Co., Ltd., Toronto.

FLOORING, hardwood

Seaman Kent Co., Ltd., Meaford,
 Ont.

FLOUR MILL MACHINERY

*Canadian Allis-Chalmers, Limited,
 Toronto.

FLUE LINERS

Standard Clay Products, Ltd., St.
 Johns, Que.

FORGES

*Canadian Blower & Forge Co., Ltd.,
 Kitchener, Ont.

*Sheldons, Limited, Galt, Ont.

FORGINGS

Canada Forge Co., Ltd., Welland.

*The Steel Co. of Canada, Limited,
 Hamilton, Ont.

FORGINGS, drop

*Canadian Billings & Spencer, Ltd.,
 Welland, Ont.

*Dominion Forge and Stamping
 Co., Walkerville, Ont.

FOUNDRY EQUIPMENT

*Northern Crane Works, Limited,
 Walkerville, Ont.

FOUNTAIN FRUITS and Juices

J. J. McLaughlin, Ltd., Toronto.

FOUNTAINS, drinking

*Mueller Mfg. Co., Ltd., Sarnia.

FRICTION CLUTCH PULLEYS

*Dodge Mfg. Co., Ltd., Toronto.

FROGS AND CROSSINGS,

manganese

Canadian Ramapo Iron Works, Ltd.,
 Niagara Falls, Ont.

FUEL

Standard Fuel Co., Toronto.

FUR GARMENTS, men's and

women's

Holt, Renfrew, Ltd., Quebec.

FUR GOODS

John W. Peck & Co., Limited,
 Montreal, Que.

FUR TRIMMINGS, ornaments and

buttons

J. Henry Peters Co., 1 Mincing St.,
 Toronto.

FURNACES

McClary Mfg. Co., London, Ont.

The Jas. Smart Mfg. Co., Limited,
 Brockville, Ont.

FURNACES, hot air

Bedford Stove Co., Bedford, Que.

FURNACES, oil burning

*Mechanical Engineering Works,
 Montreal, Que.

FURNITURE, hall

The George McLagan Furniture Co.,
 Limited, Stratford, Ont.

FURNITURE, office

The Canadian Office and School
 Furniture Co., Ltd., Preston, Ont.

FURNITURE, reed and rattan

Imperial Rattan Co., Ltd., Strat-
 ford, Ont.

FUSE BOXES

*Crouse-Hinds Co., Ltd., Toronto.

FUSE PLUGS AND FUSES, refill-

able

*The Clemens Electrical Corpora-
 tion of Canada, Ltd., Hamilton, Ont.

FUSES

*Economy Fuse and Mfg. Co., Mon-
 treal.

GALVANIZED IRON

*A. C. Leslie & Co., Montreal.

GALVANIZED SHEETS

*Dominion Sheet Metal Co., Ham-
 iltion, Ont.

GALVANIZERS

Acme Stamping & Tool Works, Ltd.,
 Hamilton, Ont.

*Ontario Wind Engine and Pump
 Co., Limited, Toronto.

*The Pedlar People, Ltd., Oshawa.

GASOLINE ENGINES

*Ontario Wind & Pump Co., Ltd.,
 Toronto.

De Laval Dairy Supply Co., Ltd.,
 Peterboro, Ont.

GASOLINE FIRE ENGINES

*The Waterous Engine Works Co.,
 Ltd., Brantford, Ont.

GASOLINE MOTORS, "Imperial"

Marine

Bruce Stewart & Co., Ltd., Char-
 lottetown, P.E.I.

GASOLINE, storage systems

*Steel Trough and Machine Co., Ltd.,
 Tweed, Ont.

GASOLINE STORAGE SYSTEMS,

special underground

S. F. Bowser & Co., Toronto.

GASOLINE

*The Imperial Oil Co., Limited,
 Toronto.

GAUGES

*Brown Engineering Corporation,
 Toronto.

*John Whitfield Co., Toronto.

GEARS, cut

*Brown Engineering Corporation,
 Toronto.

*Hamilton Gear & Machine, Toronto.

*Winnipeg Gear & Engineering
 Co., Ltd., Winnipeg.

GEARS, noiseless fibre, also rein-

forced

*Beveridge Paper Co., Limited,
 Montreal.

GELATINE

Canada Gelatine Co., Ltd., Brant-
 ford.

GENERATORS

*Canadian Crocker-Wheeler Co.,
 Ltd., St. Catharines, Ont.

*Canadian Westinghouse Co., Ltd.,
 Hamilton, Ont.

GENERATORS, electric

*Canadian General Electric Com-
 pany, Ltd., Toronto.

GINs

The Melchers Gin & Spirits Dis-
 tillery Co., Ltd., Montreal, Que.

GLASSWARE

Dominion Glass Co., Limited, Mon-
 treal, Que.

GLASSWARE, cut

Roden Bros., Ltd., Toronto.

GLASS FOR BUILDINGS

Toronto Plate Glass Importing Co.,
 Limited, Toronto.

GLASS BENDERS

Toronto Plate Glass Importing Co.,
 Limited, Toronto.

GLASS, mirror

Toronto Plate Glass Importing Co.,
 Limited, Toronto.

GLOVES AND MITTS

*A. R. Clarke & Co., Ltd., Toronto.

Craig, Cowan Co., Ltd., Toronto.

GLUE

Canada Glue Co., Ltd., Brantford.

*Delany and Pettit, Ltd., Toronto.

GOLD-FILLED WIRE AND

PLATE

Canadian Seamless Wire Co., To-
 ronto.

GOLD AND SILVER REFINERS

Canadian Seamless Wire Co., To-
 ronto.

GRAIN CRUSHERS (Rapid Easy)

J. Fleury's Sons, Aurora, Ont.

GRAPE JUICE

J. J. McLaughlin, Ltd., Toronto.

The Welch Co., Ltd., St. Catharines.

GRATES

*The Goldie & McCulloch Co., Ltd.,
 Galt, Ont.

GRAVITY CARRIERS

*Canadian Mathews Gravity Carrier
 Co., Toronto.

GRILLES, metal

*Canada Wire & Iron Goods Co.,
 Hamilton, Ont.

*Dennis Wire & Iron Works Co.,
 London, Ont.

GRINDER, bench

*Canadian Bond Hanger & Coup-
 ling Co., Alexandria, Ont.

GRINDERS, portable

*Canadian Ingersoll-Rand Co., Ltd.,
 Montreal, Que.

GRINDERS, Pedestal and Bench

*Canadian Hart Wheels, Limited,
 Hamilton, Ont.

GRINDING and Polishing Machinery

*Canadian Hart Wheels, Limited,
 Hamilton, Ont.

GRINDING WHEELS

*Canadian Hart Wheels, Limited,
 Hamilton, Ont.

*The Dominion Abrasive Wheel
 Co., Limited, New Toronto.

GRINDSTONES

*Richards-Wilcox Canadian Co.,
 Limited, London, Ont.

GUARDS (Condulet)

*Crouse-Hinds Co., Ltd., Toronto.

GUNN SECTIONAL BOOKCASES

The Geo. McLagan Furniture Co.,
 Limited, Stratford, Ont.

GUY ANCHORS

B. J. Coghlin Co., Ltd., Montreal.

GUY RODS

*Crouse-Hinds Co., Ltd., Toronto.

GYPSPUM, crushed

*Albert Mfg. Co., Hillsborough, N.B.

GYPSPUM PRODUCTS

*Manitoba Gypsum Co., Ltd., Win-
 niipeg, Man.

De Laval Dairy Supply Co., Ltd.,
 Peterboro, Ont.

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HEATERS, feed water

- *Darling Bros., Ltd., Montreal.
- *The Goldie & McCulloch Co., Ltd., Galt, Ont.

HEATING APPLIANCES

- *C. A. Dunham Co., Ltd., Toronto.
- *Darling Bros., Ltd., Montreal.
- *Sheldons, Limited, Galt, Ont.
- *The Canadian Blower & Forge Co., Limited, Kitchener, Ont.

HEATING SYSTEMS

- *C. A. Dunham Co., Ltd., Toronto.

HEMLOCK, union and oak sole

- Breithaupt Leather Co., Ltd., Kitchener, Ont.

HESSIANS

- The Canadian Bag Co., Limited, Montreal, Que.
- *Scythes & Co., Limited, Toronto.

HINGES

- *The Steel Co. of Canada, Limited, Hamilton, Ont.

HOISTS

- *M. Beatty & Sons, Ltd., Welland, Ont.
- *Northern Crane Works, Limited, Walkerville, Ont.

HOISTS, electric and pneumatic

- *Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
- *M. Beatty & Sons, Ltd., Welland, Ont.

HOISTS, electric and pneumatic

- *Northern Crane Works, Limited, Walkerville, Ont.

HOISTING MACHINERY

- *Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
- *M. Beatty & Sons, Ltd., Welland, Ont.
- *Northern Crane Works, Limited, Walkerville, Ont.

HOSE, fire

- *Canadian Consolidated Rubber Co., Limited, Montreal, Que.
- *Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
- *Gutta Percha & Rubber, Ltd., Toronto.

HOSE, half, Imperial

- Kingston Hosiery Co., Ltd., Kingston, Ont.

HOSE, rubber

- *Canadian Consolidated Rubber Co., Limited, Montreal, Que.
- *Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
- *Gutta Percha & Rubber, Limited, Toronto.

HYDRAULIC PRESSES

- *Bawden Machine Co., Limited, Toronto.
- *William R. Perrin, Ltd., Toronto

HYDRO ELECTRIC PLANTS

- *Canadian Allis-Chalmers, Limited, Toronto.

ICE CREEPERS

- Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ICE-MAKING MACHINERY

- The Linde Canadian Refrigeration Co., Limited, Montreal, Que.

INCUBATORS & BROODERS

- Lee Mfg. Co., Ltd., Pembroke, Ont

INGOT METALS

- *Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

INJECTORS, automatic and

- autopositive
- Penberthy Injector Co., Limited, Windsor, Ont.

INSERTED TOOTH SAWS

- *E. C. Atkins & Co., Inc., Hamilton, Ont.

INSULATING COMPOUNDS

- The Imperial Varnish & Color Co., Ltd., Toronto.

INSULATING PAPER AND FIBRE

- *Beveridge Paper Co., Limited, Montreal.

INSULATORS

- *Crouse-Hinds Co., Ltd., Toronto.

INTERLOCKING RUBBER TILING

- *Gutta Percha & Rubber Mfg. Co. of Toronto, Limited, Toronto.

INVERTS

- Standard Clay Products, Ltd., St. Johns, Que.

IRON

- *Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.

IRON, refined bar

- Starr Mfg. Co., Ltd., Dartmouth, N.S.

IRON AND STEEL BARS

- *Burlington Steel Co., Ltd., Hamilton, Ont.
- *The Steel Co. of Canada, Limited, Hamilton, Ont.

IRON STAIRWAYS

- *Canada Wire & Iron Goods Co., Hamilton, Ont.
- *Dennis Wire & Iron Works Co., London, Ont.
- *McGregor & McIntyre, Ltd., Toronto.

IRONWORK, architectural

- *Canadian Allis-Chalmers, Limited, Toronto.
- *Canada Wire & Iron Goods Co., Hamilton, Ont.

IRONWORK, ornamental

- *Canada Wire & Iron Goods Co., Hamilton, Ont.

IRON, LEAD AND PUTTY

- A. R. Whittall, Montreal, Que.

JACKS

- Globe Engineering Co., Ltd., Hamilton

JAM, canned goods, etc.

- E. D. Smith & Son, Limited.

JAPANS, enamels, etc.

- A. Muirhead Co., Ltd., Toronto.
- The Imperial Varnish & Color Co., Ltd., Toronto.

JIGS AND TOOLS

- *Brown Engineering Corporation, Toronto.

JOINTERS

- *Canada Machinery Corporation, Limited, Galt, Ont.
- *P. B. Yates Machine Co., Ltd., Hamilton, Ont.

JELLY POWDER

- S. H. Ewing & Sons, Montreal, Que.

JEWELRY, enamelled souvenir

- Caron Bros., Montreal, Que.

JEWELRY, gold-filled

- Caron Bros., Montreal, Que.

JOIST HANGERS

- *Richards-Wilcox Canadian Co., Limited, London, Ont.

JUNCTION BOXES, cable

- *Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

KELSEY WARM AIR

- GENERATOR
- The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

KILNS

- *Sheldons, Limited, Galt, Ont.

KINDLING

- Standard Fuel Co., Toronto.

KNIFE GRINDERS

- *Canada Machinery Corporation, Limited, Galt, Ont.

KNITTED GOODS

- *W. H. Banfield & Sons, Toronto.

KNIVES

- *Penman's, Limited, Paris, Ont.

KNIVES

- *Galt Knife Co., Ltd.
- Henry Disston and Sons, Toronto
- The Peter Hay Knife Co., Limited, Galt, Ont.

KNIVES, pulp and paper

- Simonds Canada Saw Co., Limited, Montreal, Que.

KNIVES, pulp and paper

- Henry Disston and Sons, Toronto.
- The Peter Hay Knife Co., Limited, Galt, Ont.

KODAKS AND PHOTOGRAPHIC SUPPLIES

- Canadian Kodak Co., Ltd., Toronto

LABELS

- Lawson & Jones, Ltd., London, Ont.

LABELS, lithographed

- Harris Lithographing Co., Toronto

LACE LEATHER

- F. O. McCordick, St. Catharines, Ont.

LADIES, foundry

- *Sadler & Haworth, Montreal, Que.
- *The D. K. McLaren Belting Co., Limited, Montreal, Que.

LADIES, foundry

- *The J. C. McLaren Belting Co., Limited, Montreal, Que.

LADDERS

- Stratford Mfg. Co., Ltd., Stratford, Ont.

LADDERS, step.

- *Otterville Mfg. Co., Ltd., Otterville, Ont.

LADLES, foundry

- *Northern Crane Works, Limited, Walkerville, Ont.

LAGER

- F. L. Drewry, Winnipeg, Man.

LAMP GLOBES

- *Crouse-Hinds Co., Ltd., Toronto.

LARD

- F. W. Fearman Co., Ltd., Hamilton, Ont.

LATH

- The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

LATHE CHUCKS

- Ker & Goodwin, Brantford, Ont.

LATHE-DOGS

- Canadian Billings & Spencer, Ltd., Welland, Ont.

LATHES

- *Canada Machinery Corporation, Limited, Galt, Ont.

LAUNCHES

- Peterboro Canoe Co., Ltd., Peterboro, Ont.

LAWN MOWERS

- Taylor-Forbes Co., Limited, Guelph, Ont.

LAWN SWINGS

- Stratford Mfg. Co., Ltd., Stratford, Ont.

LAVATORIES, enameled

- Amherst Foundry Co., Limited, Amherst, N.S.

LAUNDRY SINKS

- Amherst Foundry Co., Limited, Amherst, N.S.

LEAD GRINDERS

- Benjamin Moore & Co., Limited, Toronto.

LEAD SHEET

- Toronto Plate Glass Importing Co., Limited, Toronto.

LEAD PIPE

- *The Steel Co. of Canada, Limited, Hamilton, Ont.

- Toronto Plate Glass Importing Co., Limited, Toronto.

- *The Canada Metal Co., Toronto.

- *United Brass & Lead, Ltd., Toronto

LEATHER

- The Robson Leather Co., Limited, Oshawa, Ont.

LEATHER, bookbinders'

- Clarke & Clarke, Ltd., Toronto.

LEATHER, fancy

- Clarke & Clarke, Ltd., Toronto.

LEATHER GOODS

- Lamontagne Ltd., Montreal, Ont.

- LEATHER, hemlock, union and oak sole

- The Breithaupt Leather Co., Ltd., Kitchener, Ont.

LEATHER, patent colt and side

- leather
- *A. R. Clarke & Co., Ltd., Toronto.

LEATHER, sheep skin, etc.

- Clarke & Clarke, Ltd., Toronto.

LEATHER, upholstering

- Clarke & Clarke, Ltd., Toronto.

LEATHER, upper

- A. Davis & Son, Ltd., Kingston, Ont.

LIGHTS (marine, side and port)

- *Crouse-Hinds Co., Ltd., Toronto.

LINK BELT, Ewart, and sawmill

- riveted
- *Canadian Link-Belt Co., Toronto.

LINK BELTING

- *The Dodge Mfg. Co., Ltd., Toronto.

- *The Goldie & McCulloch Co., Ltd., Galt, Ont.

LINOLEUM

- Dominion Oil Cloth Co., Limited, Montreal, Que.

LITHOGRAPHED BUSINESS STATIONERY

- Business Systems, Ltd., Toronto.

LITHOGRAPHED TIN WARE

- *MacDonald Mfg. Co., Limited, Toronto.

LITHOGRAPHERS

- American Bank Note Company, Ottawa, Ont.

- Harris Lithographing Co., Toronto.

LOCKERS

- *Canada Wire & Iron Works Co., Hamilton, Ont.

- *Dennis Wire & Iron Works Co., London, Ont.

- *Geo. B. Meadows, Wire, Iron and Brass Works Co., Toronto.

LOCOMOTIVE BLOCKS

- Standard Clay Products, Limited, St. Johns, Que.

LOCOMOTIVES, industrial

- *Montreal Locomotive Works, Ltd., Montreal, Que.

LOCOMOTIVE & MARINE BRASS WORKS

- The James Morrison Brass Mfg. Co., Limited, Toronto

- *United Brass & Lead, Ltd., Toronto

LOOSE LEAF, BINDERS AND FORMS

- Business Systems, Ltd., Toronto.

LOOSE LEAF SYSTEMS

- Copeland-Chatterson Co., Limited, Brampton, Ont.

LOOSE LEAF SUPPLIES

- The Esdale Press, Ltd., Edmonton.

LUBRICATORS, steam sight feed

- Penberthy Injector Co., Limited, Windsor, Ont.

LUGS, for silos and water tanks

- *Ontario Wind Engine & Pump Co., Ltd., Toronto.

- *Otterville Mfg. Co., Ltd., Otterville, Ont.

LUMBER

- *Brown Corporation, La Tuque, Que.

- The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

- G. & J. Esplen, Montreal, Que.

LUMBER, asbestos

- *Eureka Mineral Wool & Asbestos Co., Toronto.

- LUMBER, spruce and pine, cedar railway ties and shingles

- Bathurst Lumber Co., Ltd., Bathurst, N.B.

LUMBERING BLANKETS

- Slingsby Mfg. Co., Ltd., Brantford, Ont.

- LUMBER, red pine and spruce

- Gillies Bros., Ltd., Braeside, Ont.

- LUMBER, spruce, fir, larch and cedar

- Fernie Lumber Co., Ltd., Fernie, B.C.

LUMBER, white pine

- Gillies Bros., Ltd., Braeside, Ont.

MACHINE KNIVES

- *Galt Knife Co., Ltd.

- *E. C. Atkins & Co., Inc., Hamilton, Ont.

MACHINE TOOLS

- *Canada Machinery Corporation, Limited, Galt, Ont.

- *John Bertram & Sons Co., Ltd., Dundas, Ont.

- *United Brass & Lead, Ltd., Toronto

- MACHINE WORK, special

- *United Brass & Lead, Ltd., Toronto

- MACHINE WORK, special and repairs

- *Canadian Rumely Co., Limited, Toronto, Ont.

- MACHINERY, special**
Bawden Machine Co., Limited, Toronto.
- MACHINERY, tannery**
W. P. Plant, Hastings, Ont.
- MACHINERY, transmission**
*Canadian Bond Hanger and Coupling Co., Ltd., Alexandria, Ont.
*Dodge Mfg. Co., Ltd., Toronto.
*Goldie & McCulloch Co., Limited, Galt, Ont.
- MACHINERY, woodworking**
*Canada Machinery Corporation, Limited, Galt, Ont.
*Yates, P. B., Machine Co., Ltd., Hamilton, Ont.
Preston Woodworking Machinery Co., Ltd., Preston.
*The Waterson Engine Works Co., Limited, Brantford, Ont.
- MACHINE WORK, special and repairs**
*Canadian Rumely Co., Ltd., Toronto, Ont.
- MACHINE WRENCHES**
*Canadian Billings & Spencer, Ltd., Welland, Ont.
- MACHINES, painting**
Spramator Co., London, Ont.
- MAGNESITE**
Canadian Carbonate Co., Limited, Montreal, Que.
- MALT**
*Hiram Walker & Sons, Limited, Walkerville, Ont.
- MAPLE PRODUCTS**
*Maples, Limited, Toronto.
- MAPS AND MAP MOUNTING**
The Geo. M. Hendry Co., Limited, Toronto.
- MARTINGALE RINGS AND SLIDE LOOPS**
The Arlington Co. of Canada, Ltd., Toronto.
- MATCHERS**
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
- MATCHES**
*The E. B. Eddy Co., Ltd., Hull.
- MECHANICAL STOKERS**
*The Jones Underfeed Stoker Co., Ltd., Toronto.
- MEDICINES, patented and pharmaceutical**
Dr. Ed. Morin & Cie., Ltd., Quebec.
- METAL, babbitt**
*Canada Metal Co., Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.
Alonzo W. Spooner, Limited, Port Hope, Ont.
- METAL CEILING**
*The Pedlar People Limited, Oshawa.
- METAL LATH**
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
*The Pedlar People Limited, Oshawa.
- METAL PACKING**
*Garlock Packing Company, Hamilton, Ont.
- METAL, spinning and stamping**
The Booth-Coulter Copper and Brass Co., Limited, Toronto.
- METAL SAWS**
*E. C. Atkins & Co., Inc., Hamilton, Ont.
- METAL SHINGLES**
*The Pedlar People Limited, Oshawa.
- MILK DEALERS' MACHINERY AND SUPPLIES**
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.
- MILLBOARD, asbestos**
*Eureka Mineral Wool & Asbestos Co., Toronto.
- MILLING CUTTERS**
Pratt and Whitney Company of Canada, Dundas, Ont.
- MINING MACHINERY**
*Canadian Allis-Chalmers, Limited, Toronto.
- MITTS AND GLOVES (Indian, tan, red deerskins)**
Holt, Renfrew Ltd., Quebec, Que.
A. R. Clarke & Co., Ltd., Toronto
- MOCCASINS AND SLIPPERS (Indian tanned leathers)**
Holt, Renfrew Ltd., Quebec, Que.
- MORTISERS**
*Canada Machinery Corporation, Limited, Galt, Ont.
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
- MOTOR CARS**
*Ford Co. of Canada, Ford, Ont.
- MOTORS, electric**
*Canadian General Electric Company, Ltd., Toronto.
- MOTORS, electric (alternating current)**
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*Canadian Crocker-Wheeler Co., Ltd., St. Catharines, Ont.
*T. & H. Electric Co., Hamilton.
- MOTORS, electric (direct current)**
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*T. & H. Electric Co., Hamilton.
- MOTORS, electric (repairing)**
Consolidated Electric Co., Limited, Toronto.
*T. & H. Electric Co., Hamilton.
- MOTORS, pneumatic**
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
- MOULDERS**
*Canada Machinery Corporation, Limited, Galt, Ont.
- NAILS**
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
- NAILS, copper**
*The Steel Co. of Canada, Limited, Hamilton, Ont.
- NAILS, wire**
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.
- NAILS, wire**
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.
- NAPHTHA**
*The Imperial Oil Co., Limited, Toronto.
- NICKEL OXIDE**
Coniagas Reduction Co., Limited, St. Catharines, Ont.
- NUTS**
*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.
*The National Acme Mfg. Co., Montreal, Que.
*The Steel Co. of Canada, Limited, Hamilton, Ont.
*United Brass & Lead, Ltd., Toronto
- OAKUM, plumbers, Canadian Navy Factory Waste and Metal Co., Montreal, Que.**
- OAT CRUSHERS AND FLAKERS**
J. Fleury's Sons, Aurora, Ont.
- OFFICE DESKS**
*Goderich Organ Co., Goderich, Ont.
- OFFICE EQUIPMENT**
*Office Specialty Co., Newmarket, Ont.
- OFFICE FURNITURE**
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
- OILS**
Brandram-Henderson, Ltd., Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.
Sherwin-Williams Co. of Canada, Limited, Montreal, Que.
- OIL FILTRATION AND CIRCULATING SYSTEMS**
S. F. Bowser & Co., Toronto.
- OIL STORAGE SYSTEMS, self-measuring**
S. F. Bowser & Co., Toronto.
- OIL COMPANIES**
*Canadian Oil Cos., Toronto.
Commercial Oil Co., Ltd., Hamilton, Ont.
*Imperial Oil Co., Toronto.
- OILS (Petroleum products)**
*British American Oil Co., Limited, Toronto.
*The Imperial Oil Co., Limited, Toronto.
- OILS, road**
*The Barrett Co., Ltd., Toronto and Montreal.
- OILCLOTHS, floor and table**
Dominion Oil Cloth Co., Limited, Montreal, Que.
- ORGANS**
*Goderich Organ Co., Goderich, Ont.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.
Thomas Organ & Piano Co., Woodstock, Ont.
- ORGANS, pipe**
Casavant Freres, St. Hyacinthe, Que.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.
- ORGANS, parlor**
*Goderich Organ Co., Goderich, Ont.
- ORNAMENTAL IRON WORK**
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*The Geo. B. Meadows, Toronto Iron and Brass Goods Works Co., Limited, Toronto.
*McGregor & McIntyre, Ltd., Toronto.
- OVENS, portable bake**
Bedford Stove Co., Bedford, Que.
Mackenzie & Co., Ottawa, Ont.
Peerless Overall Co., Rock Island, Que.
Walker Pant and Shirt Co., Walkerville and Chatham, Ont.
The Standard Shirt Co., Limited, Montreal, Que.
- OVERCOATINGS**
Rosamond Woollen Co., Almonte, Ont.
- OVERHEAD RUNWAYS**
*Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.
*Richards-Wilcox Canadian Co., Limited, London, Ont.
- OXY-ACETYLENE WELDING**
*L'Air Liquide Society, Montreal.
*The Prest-O-Lite Co., Inc., Toronto.
- OXYGEN**
*L'Air Liquide Society, Montreal.
- PACKERS, parchment papers, discs, shavings**
*Beveridge Paper Co., Limited, Montreal.
- PACKING BOXES**
Barchard & Co., Limited, Toronto.
- PACKING, engine**
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Garlock Packing Co., Hamilton.
- PACKING, rubber**
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Limited, Jenkins Bros., Ltd., Montreal, Que.
- PAIS AND TUBS, wooden**
The C. Beck Mfg. Co., Limited, Penetanguishene, Ont.
- PAINTERS' SUPPLIES**
A. Muirhead Co., Ltd., Toronto.
- PAINTS**
R. C. Jamieson & Co., Limited, Montreal, Que.
- PAINTS AND VARNISHES**
A. Muirhead Co., Ltd., Toronto.
Benjamin Moore & Co., Limited, Toronto.
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
The Imperial Varnish & Color Co., Limited, Toronto.
The Staneland Co., Ltd., Victoria, B.C.
A. Ramsay & Sons Co., Montreal, Que.
Standard Paint Co. of Canada, Limited, Montreal, Que.
- PAINTS, barn and bridge**
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
- PAINTS, preservative**
Standard Paint Co. of Canada, Limited, Montreal, Que.
*The Barrett Co., Ltd., Toronto and Montreal.
- PANELBOARDS**
*Crouse-Hinds Co., Ltd., Toronto.
- PAPER BAGS**
*Beveridge Paper Co., Limited, Montreal.
- PAPER, book**
Barber Paper & Coating Mills, Ltd., Georgetown, Ont.
- PAPER BOXES**
King Paper Box Co., Ltd., Montreal, Que.
*Rudd Paper Box Co., Limited, Toronto.
- PAPER, coated, book and label**
*Provincial Paper Mills, Limited, Georgetown, Ont.
- PAPER, coated box board**
*Provincial Paper Mills, Limited, Georgetown, Ont.
- PAPER, coated cover**
*Provincial Paper Mills, Limited, Georgetown, Ont.
- PAPER, envelope**
Provincial Paper Mills Limited, Georgetown, Ont.
The Toronto Paper Manufacturing Co., Cornwall, Ont.
- PAPER, enamelled blotting**
*Provincial Paper Mills, Limited, Georgetown, Ont.
- PAPER, kraft and all wrappings, printings and specialties**
*Beveridge Paper Co., Limited, Montreal.
- PAPER, label**
*Provincial Paper Mills, Limited, Georgetown, Ont.
- PAPER, ledger**
*Howard Smith Paper Mills, Ltd., Montreal.
- PAPER, news**
*The Riordon Pulp and Paper Co., Montreal, Que.
- PAPER, super-book**
The Toronto Paper Manufacturing Co., Cornwall, Ont.
- PAPER, wall**
Stauntons, Ltd., Toronto.
- PAPER, waxed**
Business Systems, Ltd., Toronto.
- PAPER, wrapping, printing and specialties**
*The Riordon Pulp and Paper Co., Montreal, Que.
- PAPER, writing**
The Toronto Paper Manufacturing Co., Cornwall, Ont.
Howard Smith Paper Mills, Limited, Montreal.
- PAPER, writing**
*Rolland Paper Co., Limited, Montreal, Que.
- PAPERS, bond**
*Howard Smith Paper Mills, Ltd., Montreal.
- PAPERS, building**
*Rolland Paper Co., Ltd., Montreal, Que.
- PAPERS, building**
Bathurst Lumber Co., Ltd., Bathurst, N.B.
*The Riordon Pulp and Paper Co., Montreal, Que.
- Standard Paint Co. of Canada, Ltd., Montreal, Que.**
- PARK SEATS**
Stratford Mfg. Co., Ltd., Stratford, Ont.
- PARLOR SUNDRIES**
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.
- PATENTS**
Fetherstonhaugh & Co., Toronto.
Ridout and Maybee, Toronto.
- PATENT LITIGATION**
Ridout and Maybee, Toronto.
- PAY ROLL AUDITS**
*International Business Machines, Limited, Toronto.
- PEAS AND BEANS FOR SEED**
W. P. Niles, Ltd., Wellington, Ont.
- PERFORATED METALS**
*Canada Wire & Iron Goods Co., Hamilton, Ont.
- PERFORATED MUSIC ROLLS**
The Otto Higel Co., Ltd., Toronto.
- PERFUMES AND TOILET PREPARATIONS**
Sovereign Perfumes Ltd., Toronto.
- PETROLEUM PRODUCTS**
*The Imperial Oil Co., Limited, Toronto.
- PHOTOMAILERS**
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.
- PIANOS**
Dominion Organ & Piano Co., Ltd., Bowmanville, Ont.
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.
- PIANO ACTIONS**
The Otto Higel Co., Ltd., Toronto.
- PIANO KEYS**
The Otto Higel Co., Ltd., Toronto.
- PIANOS, player**
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.
- PIANO, player actions**
The Otto Higel Co., Ltd., Toronto.
- PIANO STOOLS and BENCHES**
*Goderich Organ Co., Goderich, Ont.
- PIG IRON**
*The Steel Co. of Canada, Limited, Hamilton, Ont.
- PINE DOORS, SASH, MOULDINGS, ETC.**
Wilson Bros., Limited, Collingwood, Ont.
- PINS, society, emblems and badges**
Caron Bros., Montreal, Que.

- PIPE**, cast iron, for water and gas
National Iron Works, Ltd., Toronto.
- PIPE COUPLINGS**
*The Steel Co. of Canada, Limited, Hamilton, Ont.
- PIPE COVERINGS**
*Eureka Mineral Wood & Asbestos Co., Toronto.
- PIPE ORGANS**
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.
- PIPES**, culvert
Standard Clay Products, Ltd., St. Johns, Que.
- *The Pedlar People Limited, Oshawa.
- PIPE AND NIPPLES** black and galvanized
*Canadian Tube & Iron Co., Ltd., Montreal, Que.
- PIPE**, sewer
Hamilton and Toronto Sewer Pipe Co., Limited, Hamilton, Ont.
- Standard Clay Products, Ltd., St. Johns, Que.
- PIPE**, soil and fittings
Athes Foundry, Ltd., Toronto and Winnipeg.
- Warden King Ltd., Montreal, Que.
- PIPE AND TUBES**, wrought
*Page-Hersey Iron Tube and Lead Co., Ltd., Toronto.
- PIPE**, threading and cutting off machines
John H. Hall & Sons, Limited, Brantford, Ont.
- PISTON RODS**
*The Canadian Drawn Steel Co., Limited, Hamilton, Ont.
- *Union Drawn Steel Co., Limited, Hamilton, Ont.
- PLANERS**
*Canada Machinery Corporation, Limited, Galt, Ont.
- *P. B. Yates Machine Co., Ltd., Hamilton, Ont.
- PLANING MILLS**
G. & J. Esplen, Montreal, Que.
- PLASTERING TROWELS**
*E. C. Atkins & Co., Inc., Hamilton, Ont.
- PLOWS**
J. Fleury's Sons, Aurora, Ont.
- PLUGS**
*Crouse-Hinds Co., Ltd., Toronto.
- PLUMBERS' SUPPLIES**
The Garth Co., Montreal, Que.
- The James Morrison Brass Mfg. Co., Ltd., Toronto.
- *United Brass & Lead, Ltd., Toronto
- PLUMBING APPLIANCES**
Standard Sanitary Mfg. Co., Ltd., Limited, Toronto.
- PLUMBING SUPPLIES**
Toronto Plate Glass Importing Co., Limited, Toronto.
- PNEUMATIC DRILLS**
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
- PNEUMATIC MACHINERY**
*Canadian Ingersoll-Rand Co., Sherbrooke, P.Q.
- POLE LINE MATERIAL** (wooden insulator top pins, side blocks, pole steps, cross arms)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.
- POLES**, flag
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
- POLES**, telegraph and telephone, cedar
Ferne Lumber Co., Ltd., Fernie, B.C.
- PORK PACKERS AND CHEESE EXPORTERS**
The Ingersoll Packing Co., Limited, Ingersoll, Ont.
- POSTS**, split cedar fence
Ferne Lumber Co., Ltd., Fernie, B.C.
- POULTRY SUPPLIES AND MEDICINES**
Lee Mfg. Co., Ltd., Pembroke, Ont.
- POWDER**, blasting
Canadian Explosives, Ltd., Montreal, Que.
- POWER PRESSES**
Hydraulic Machinery Co., Limited, Montreal.
- *William R. Perrin, Ltd., Toronto.
- PRESERVATIVE PAINT**
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
- PRESERVATIVE PAINT FOR BOILERS**
*Beveridge Paper Co., Limited, Montreal.
- PRESSES**, baling and filter
*William R. Perrin, Ltd., Toronto.
- PRESSES**, hydraulic
Hydraulic Machinery Co., Limited, Montreal.
- PRESSES**, sheet metal stamping
Brown, Boggs Co., Ltd., Hamilton, Ont.
- *Canada Machinery Corporation, Limited, Galt, Ont.
- PRESSES**, veneer
*Canada Machinery Corporation, Limited, Galt, Ont.
- Hydraulic Machinery Co., Limited, Montreal.
- *William R. Perrin, Ltd., Toronto.
- PRINTERS**
Rous & Mann, Ltd., Toronto.
- PRINTING AND LITHOGRAPHING**
Lawson & Jones, Limited, London Ont.
- PULLEYS**
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
- *Dodge Mfg. Co., Ltd., Toronto.
- *The Goldie & McCulloch Co., Ltd., Galt, Ont.
- PULLEYS**, wood split.
*Bernard Industrial Co., Fortierville, P.Q.
- PULP**, bleached sulphite
The Edward Partington Pulp and Paper Co., St. John, N.B.
- PULP**, sulphate and sulphite
Bathurst Lumber Co., Ltd., Bathurst, N.B.
- PULP**
*Brown Corporation, La Tuque, Que.
- PUMPS**
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
- *Canadian Allis-Chalmers, Limited Toronto.
- *Bawden Machine Co., Ltd., Toronto.
- *Canadian Fairbanks-Morse Company, Limited, Montreal, Que.
- *Darling Bros., Ltd., Montreal.
- *Ontario Wind Engine & Pump Co., Ltd., Toronto.
- *Smart-Turner Machine Co., Ltd., Hamilton, Ont.
- Spramotor Co., London, Ont.
- PUMPS**, boiler feed
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
- *Bawden Machine Co., Ltd., Toronto.
- *Smart-Turner Machine Co., Ltd., Hamilton, Ont.
- *The Goldie & McCulloch Co., Ltd., Galt, Ont.
- PUMPS**, centrifugal
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
- *M. Beatty & Sons, Ltd., Welland, Ont.
- *Smart-Turner Machine Co., Ltd., Hamilton, Ont.
- *Watrous Engine Works Co., Ltd., Brantford, Ont.
- PUMPS**, iron
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
- *Goold-Shapley-Muir Co., Limited, Brantford, Ont.
- *Smart-Turner Machine Co., Ltd., Hamilton, Ont.
- *Watrous Engine Works Co., Ltd., Brantford, Ont.
- PUMPS**, turbine and reciprocating
*Bawden Machine Co., Ltd., Toronto.
- *Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
- *Smart-Turner Machine Co., Ltd., Hamilton, Ont.
- John McDougall, Caledonian Iron Works Co., Ltd., Montreal, Que.
- PUNCHES**
*John Whitfield Co., Toronto.
- *Pratt & Whitney Co., Dundas.
- PYROMETERS**
*Canadian Hoskins Co., Walkerville, Ont.
- RADIATORS**
Taylor-Forbes Co., Limited, Guelph, Ont.
- Warden King, Ltd., Montreal, Que.
- RAILINGS**, brass and iron
*Dennis Wire & Iron Works Co., London, Ont.
- *United Brass & Lead, Ltd., Toronto
- RAILS**, light
Hammant Steel Car and Engineering Works, Hamilton.
- RAILWAY SIGNAL APPLIANCES**
General Railway Signal Co. of Canada, Ltd., Montreal, Que.
- RAILWAY SUPPLIES**
*Canadian Steel Foundries, Ltd., Montreal, Que.
- *Chicago Bridge & Iron Works, Bridgeburg, Ont.
- B. J. Coghlin Co., Ltd., Montreal, Que.
- RAILWAY TARIFF BINDERS**
*The Esdale Press Ltd., Edmonton.
- READY-TO-WEAR GARMENTS, LADIES'**
H. C. Boulter Co., Ltd., Toronto.
- REAMERS**
*Pratt & Whitney Co., Dundas.
- *Butterfield & Co., Rock Island, P.Q.
- RECEPTACLES**
*Crouse-Hinds Co., Ltd., Toronto.
- *"REDWOOD" lager
E. L. Drewry, Winnipeg, Man.
- REED AND BATTAN GOODS**
Canada Furniture Mfgs., Limited, Woodstock, Ont.
- REFRIGERATORS**
Sanderson-Harold Co., Ltd., Paris, Ont.
- Lee Mfg. Co., Ltd., Pembroke, Ont.
- REFRIGERATING MACHINERY**
The Linde Canadian Refrigeration Co., Ltd., Montreal, Que.
- REFRIGERATORS**, store, homes and institutions
Ham & Nott Co., Ltd., Brantford, Ont.
- John Hillock & Co., Ltd., Toronto.
- REINFORCEMENT BARS**
*Burlington Steel Co., Ltd., Hamilton, Ont.
- *The Steel Co. of Canada, Limited, Hamilton, Ont.
- *Trussed Concrete Steel Co., Ltd., Walkerville.
- REINFORCEMENT FOR CONCRETE**
*Canada Wire & Iron Goods Co., Hamilton, Ont.
- *Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
- REINFORCEMENT FOR CONCRETE ROOFING**, Metal.
*The Pedlar People Limited, Oshawa.
- *Trussed Concrete Steel Co., Ltd., Walkerville.
- REVOLVING DOORS**
*A. B. Ormsby Co., Ltd., Toronto.
- RINGS**, gold
Caron Bros., Montreal, Que.
- RIVETERS**, pneumatic
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
- RIVETS**
*Canadian Tube & Iron Co., Ltd.
- *The Steel Co. of Canada, Limited, Hamilton, Ont.
- RIVETS**, bifurcated and tubular
Parmenter & Bulloch Co., Limited, Gananoque, Ont.
- RIVETS AND BURS**, iron, copper and brass
Parmenter & Bulloch Co., Limited, Gananoque, Ont.
- ROCK DRILLS**
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
- ROLL PRINTING**
*Autographic Register Co., Ltd., Montreal.
- Business Systems, Ltd., Toronto.
- ROOFING**, ready to lay
Standard Paint Co. of Canada, Ltd., Montreal, Que.
- *The Barrett Co., Ltd., Toronto and Montreal.
- ROOF TRUSSES**
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
- *Dominion Bridge Co., Ltd., Montreal, Que.
- ROPE**
*Doon Twines Ltd., Doon, Ont.
- *Shurly & Derrett, Ltd., Toronto.
- ROPE**, cotton
Hamilton Cotton Co., Hamilton, Ont.
- RUBBER FOOTWEAR**
Ames Holden, McCready, Limited, Montreal, Que.
- *Gutta Percha & Rubber, Ltd.
- The Miner Rubber Co., Limited, Granby, Que.
- RUBBER GOODS**
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
- *Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
- *Gutta Percha & Rubber, Ltd.
- RUBBER MOULDS**
Bawden Machine Co., Ltd., Toronto.
- RUBBER PACKING**
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
- *Garlock Packing Company, Hamilton, Ont.
- RULES**
The Lufkin Rule Co. of Canada, Ltd., Windsor, Ont.
- RYE**
The St. Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.
- SADDLERY HARDWARE**
*Dominion Forge and Stamping Co., Walkerville, Ont.
- SAFES**
*Goldie & McCulloch Co., Limited, Galt, Ont.
- J. & J. Taylor, Ltd., Toronto.
- SAMPLE CASES**
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.
- J. Eveleigh & Co., Ltd., Montreal, Que.
- SAND RAMMERS**
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
- *P. B. Yates Machine Co., Ltd., Hamilton, Ont.
- SANDPAPER**
*Delany and Pettit, Ltd., Toronto.
- SASH CORD**, cotton
Hamilton Cotton Co., Hamilton, Ont.
- SALT**
Canadian Salt Co., Ltd., Windsor, Ont.
- SANITARY PAPER TOWELS**
*E. B. Eddy Co., Ltd., Hull, Que.
- SAW SHARPENING MACHINERY**
*Canadian Hart Wheels, Limited, Hamilton, Ont.
- SAWS**
*E. C. Atkins & Co., Ltd., Hamilton.
- Henry Disston & Sons, Limited, Toronto.
- Shurly & Deitrich, Galt, Ont.
- SAWS**, cross-cut and band
*Canada Machinery Corporation, Limited, Galt, Ont.
- *P. B. Yates Machine Co., Ltd., Hamilton, Ont.
- Shurly & Deitrich, Galt, Ont.
- SAWS**, circular mill
Shurly & Deitrich, Galt, Ont.
- SAWS**, hack
*Victor Saw Works, Ltd., Hamilton, Ont.
- SAWS**, of all kinds
Simonds Canada Saw Co., Limited, Montreal, Que.
- SAWS**, rip
*Canada Machinery Corporation, Limited, Galt, Ont.
- *P. B. Yates Machine Co., Ltd., Hamilton, Ont.
- Shurly & Deitrich, Galt, Ont.
- SAWMILLS**
G. & J. Esplen, Montreal, Que.
- *The Watrous Engine Works Co., Ltd., Brantford, Ont.
- SAW MILL MACHINERY**
*Canadian Allis-Chalmers, Limited, Toronto.
- SAWS**, specialties
*Victor Saw Works, Ltd., Hamilton, Ont.
- SCALES**
The Gurney Scale Co., Hamilton, Ont.
- SCALES**, counter
The Gurney Scale Co., Hamilton, Ont.
- SCALES**, railway track, etc.
The Gurney Scale Co., Hamilton, Ont.
- SCREENS**
*Canada Wire & Iron Goods Co., Hamilton, Ont.
- SCREEN DOORS AND WINDOWS**
Sanderson-Harold Co., Ltd., Paris, Ont.
- Ham & Nott Co., Ltd., Brantford, Ont.
- SCREWS**
*John Morrow Screw & Nut Co., Ltd., Ingersoll, Ont.
- *The National Acme Mfg. Co., Montreal, Que.
- *The Steel Co. of Canada, Limited, Hamilton, Ont.
- *United Brass & Lead, Ltd., Toronto
- SCREEN PLATES**
*Butterfield & Co., Rock Island, P.Q.
- SECURITIES**, engraved
American Bank Note Co., Ottawa, Ont.

SERGES

Rosamond Woollen Co., Almonte, Ont.

SHAFTING

Canada Forge Co., Ltd., Welland, Ont.

*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.

*Canadian Drawn Steel Co., Ltd., Hamilton, Ont.

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

*Union Drawn Steel Co., Limited, Hamilton, Ont.

*Dodge Mfg. Co., Ltd., Toronto.

SHANTY BLANKETS

Slingsby Mfg. Co., Ltd., Brantford, Ont.

SHAPERS

*Canada Machinery Corporation, Limited, Galt, Ont.

*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

SHEAR BLADES, iron

*Galt Knife Co., Ltd.

The Peter Hay Knife Co., Limited, Galt, Ont.

SHEATHING

*The Barrett Co., Ltd., Toronto and Montreal.

SHEATHING, asbestos corrugated

*Eureka Mineral Wool & Asbestos Co., Toronto.

SHEET METAL STAMPINGS

Acme Stamping & Tool Works, Ltd., Hamilton, Ont.

*The Pedlar People Limited, Oshawa.

*W. H. Banfield & Sons, Ltd., Toronto.

SHEETS, galvanized

*Dominion Sheet Metal Co., Ltd., Hamilton.

*The Pedlar People Limited, Oshawa.

SHINGLES

Bathurst Lumber Co., Ltd., Bathurst, N.B.

SHINGLE SAWS

*E. C. Atkins & Co., Inc., Hamilton, Ont.

SHIRTS

MacKenzie & Co., Ottawa, Ont.

John W. Peck & Co., Ltd., Montreal, Que.

SHIRTS, workmen's

*A. R. Clarke & Co., Ltd., Toronto.

SHOE PEGWOOD

O. Chalifour, Quebec, Que.

SHOE LININGS

Galt Knitting Co., Ltd., Galt, Ont.

SHOES, running and athletic

Ames-Holden-McCready, Ltd., Montreal, Que.

SHOOKS

Barchard & Co., Ltd., Montreal.

SILENT CHAIN DRIVES

*Canadian Link-Belt Co., Toronto.

SILVER BULLION

Coniagas Reduction Co., Ltd., St. Catharines, Ont.

SILVERSMITH

Canadian Wm. A. Rogers, Ltd., Toronto.

Standard Silver Co., Toronto.

SILVERWARE, sterling

Roden Bros., Limited, Toronto.

SINKS, enamelled

Amherst Foundry Co., Limited, Amherst, N.S.

SKATES, figure

Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, genuine Acme

Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, hockey

Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, ice

Canada Cycle and Motor Co., Ltd., Toronto.

SKATE SHARPENERS

*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.

SKIFFS

Peterboro Canoe Co., Ltd., Peterboro, Ont.

SKYLIGHTS

*A. B. Ormsby Co., Ltd., Toronto.

*The Pedlar People Limited, Oshawa.

SLEIGHS

Tudhope-Anderson Co., Limited, Orillia, Ont.

SLIPPERS

Ames-Holden-McCready, Ltd., Montreal, Que.

SLOTTERS

*Canada Machinery Corporation, Limited, Galt, Ont.

SMELTER LINING

*Beveridge Paper Co., Ltd., Montreal.

SMOKE CONSUMERS

*The Jones Underfeed Stoker Co., Ltd., Toronto.

SMOKE-STACKS

*Steel Trough and Machine Co., Ltd., Tweed, Ont.

SOAPS

J. Barsalou & Co., Ltd., Montreal, Que.

SOAP (soft, oil)

The Imperial Varnish & Color Co., Ltd., Toronto.

Sherwin-Williams Co. of Canada Limited, Montreal, Que.

SOCKETS

*Crouse-Hinds Co., Ltd., Toronto.

SODA WATER FOUNTAINS

J. J. McLaughlin, Ltd., Toronto.

SOIL PIPE

Anthes Foundry, Ltd., Toronto.

SOLDER

Alonzo W. Spooner, Ltd., Port Hope, Ont.

*Canada Metal Co., Toronto.

*Tallman Brass & Metal Co., Hamilton, Ont.

SOLDER, silver

Geo. H. Lees & Co., Hamilton.

SOLDER, wire and bar

*American Can Co., Montreal, and Hamilton.

SOLDERING IRONS AND COPPERS

Brown, Boggs Co., Ltd., Hamilton, Ont.

SNOWSHOES

Holt, Renfrew, Ltd., Quebec, Que.

SPARK PLUGS

Canadian Carbon Co., Limited, Toronto.

SPECIAL MACHINERY

Globe Engineering Co., Ltd., Hamilton.

SPIKES, railway and marine

Starr Mfg. Co., Ltd., Dartmouth, N.S.

SPIRAL CONVEYORS

*Canadian Mathews Gravity Carrier Co., Ltd., Toronto.

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

SPLIT PEAS

H. Murton, Ltd., Guelph, Ont.

SPIRITS

*Hiram Walker & Sons, Limited, Walkerville, Ont.

SPORTING MEDALS AND TROPHIES

Roden Bros., Limited, Toronto.

SPRAYERS

Spramotor Co., London, Ont.

SPRING COTTERS

*Richards-Wilcox Canadian Co., Limited, London, Ont.

SPRINGS

*Canadian Steel Foundries, Ltd., Montreal, Que.

B. J. Coghlin Co., Ltd., Montreal, Que.

Guelph Spring & Axle Co., Ltd., Guelph, Ont.

SPRINGS, carriage and automobile

Guelph Spring & Axle Co., Ltd., Guelph, Ont.

SPRINKLER SYSTEMS

*Chicago Bridge & Iron Works, Bridgeburg, Ont.

*The Bennett & Wright Co., Ltd., Toronto, Ont.

*Purdy, Manell, Ltd., Toronto.

*Vogel Co. of Canada, Ltd., Montreal, Que.

SPROCKET WHEELS

*Canadian Link Belt Co., Ltd., Toronto.

STAINS

R. C. Jamieson & Co., Ltd., Montreal, Que.

STAINS, creosote shingle

A. Muirhead Co., Ltd., Toronto.

STAMPINGS

*Dominion Forge and Stamping Co., Ltd., Walkerville, Ont.

STAMPS, steel, brass and rubber

Pritchard-Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

STAMP MILLS

*Jenckes Machine Co., Sherbrooke.

STATIONERY, office

Harris Lithographing Co., Toronto.

STEAM PIPE and BOILER COVERINGS, asbestos

*Eureka Mineral Wool & Asbestos Co., Toronto.

STEAM SHOVELS

*M. Beatty & Sons, Ltd., Welland.

STEAM SPECIALTIES

*C. A. Dunham Co., Ltd., Toronto.

*Darling Bros., Ltd., Montreal.

*Sheldons, Ltd., Galt.

STEAM TRAPS

*C. A. Dunham Co., Ltd., Toronto.

*Canadian Morehead Manufacturing Co., Limited, Woodstock.

STEEL

*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.

*Burlington Steel Co., Ltd., Hamilton, Ont.

STEEL BILLETS AND BLOOMS

*The Steel Company of Canada, Limited, Hamilton.

STEEL BUILDINGS

*The Canadian Bridge Co., Ltd., Walkerville, Ont.

*Dominion Bridge Co., Ltd., Montreal.

*McGregor & McIntyre, Ltd., Toronto.

*Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.

*The Pedlar People Limited, Oshawa.

*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

STEEL CABINETS

J. & J. Taylor, Ltd., Toronto.

STEEL CASTINGS

*Canadian Steel Foundries, Ltd., Montreal, Que.

*Dominion Steel Foundry Co., Ltd., Hamilton.

STEEL FILING EQUIPMENT

*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

STEEL PLATE WORK

*Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.

*Toronto Iron Works, Ltd., Toronto.

STEEL RODS

*The Steel Co. of Canada, Ltd., Hamilton.

STEEL SASH

*Dennis Wire & Iron Works Co., London.

*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

STEEL SHELIVING

*Dennis Wire & Iron Works Co., London.

STEEL WIRE RODS

*The Steel Company of Canada, Limited, Hamilton.

STENCILS, brass

Pritchard-Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

STEREOTYPING

Central Press Agency, Toronto

STOKERS

*The Jones Underfeed Stoker Co., Ltd., Toronto.

STOOLS AND BENCHES, piano and organ

*Otterville Mfg. Co., Ltd., Otterville, Ont.

STOOLS, steel factory

*Steel Trough and Machine Co., Ltd., Tweed, Ont.

STONE

The Hagersville Contracting Co., Hagersville, Ont.

STORAGE BATTERIES

*Canadian General Electric Company, Ltd., Toronto.

STORE FITTINGS

The Canadian Office & School Furniture Co., Ltd., Preston, Ont.

STOVES

Smith Foundry Co., Ltd., Fredericton, N.B.

Tudhope-Anderson Co., Limited, Orillia, Ont.

Bedford Stove Co., Bedford, Que.

STOVE LININGS

Standard Clay Products, Ltd., St. Johns, Que.

STOVES AND RANGES

Bedford Stove Co., Bedford, Que.

Lee Mfg. Co., Ltd., Pembroke, Ont.

The Jas. Smart Mfg. Co., Ltd., Brockville, Ont.

McClary Mfg. Co., London, Ont.

STREET LIGHTING FIXTURES

*Crouse-Hinds Co., Ltd., Toronto.

STRETCHERS, lace curtain

*Otterville Mfg. Co., Ltd., Otterville, Ont.

STRUCTURAL STEEL

*Canadian Allis-Chalmers, Limited, Toronto.

*Dominion Bridge Co., Montreal.

*Hamilton Bridge Works Co., Ltd., Hamilton.

*Manitoba Bridge & Iron Works, Ltd., Winnipeg.

*McGregor & McIntyre, Ltd., Toronto.

*McKinnon Holmes & Co., Sherbrooke, P.Q.

*The Canadian Bridge Co., Ltd., Walkerville, Ont.

SUIT CASES

J. Eveleigh & Co., Ltd., Montreal.

The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.

SUPPLY DEALERS

*The Foundation Co., Limited, Montreal.

SURFACERS

*Canada Machinery Corporation, Limited, Galt, Ont.

*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

SWITCHBOARDS

*Canadian General Electric Company, Ltd., Toronto.

*Crouse-Hinds Co., Ltd., Toronto.

SWITCHES

*Crouse-Hinds Co., Ltd., Toronto.

SWITCHES, railway

Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.

SWITCHES AND FROGS

*Canadian Steel Foundries, Ltd., Montreal, Que.

SWITCH STANDS

Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.

TABLE COVERS, chenille

Hamilton Cotton Co., Hamilton, Ont.

TANKS

*Toronto Iron Works, Ltd., Toronto.

*Chicago Bridge & Iron Works, Bridgeburg, Ont.

Goold-Shapley-Muir Co., Ltd., Brantford, Ont.

*McKinnon Holmes & Co., Sherbrooke, P.Q.

*Ontario Wind Engine & Pump Co., Ltd., Toronto.

*The Goldie & McCulloch Co., Ltd., Galt.

*The Waterous Engine Works Co., Ltd., Brantford.

TANKS, steel storage

*Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.

*Steel Trough and Machine Co., Ltd., Tweed, Ont.

TANNERS' SUPPLIES

McClary Mfg. Co., London, Ont.

TAPS

*Butterfield & Co., Rock Island, P.Q.

*Pratt & Whitney Co., Dundas.

TAPES, measuring

The Lufkin Rule Co., of Canada, Ltd., Windsor, Ont.

TELEPHONE ACCESSORIES

- TOOLS, track**
B. J. Coghlin Co., Ltd., Hamilton, Ont.
- TOOLS, sheet metal workers'**
Brown, Boggs Co., Ltd., Hamilton.
- TRACK, steel, portable**
Hamman Steel Car and Engineering Works, Hamilton.
- TRACTORS, kerosene and gasoline**
*Gilson Manufacturing Co., Ltd., Guelph.
- TRADE MARKS AND DESIGNS**
Ridout & Maybee, Toronto.
- TRANSFORMERS**
*Canadian General Electric Company, Ltd., Toronto.
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines.
- TRANSLATIONS INTO FRENCH**
Raoul Renault, Quebec City.
- TRANSMISSION MACHINERY**
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Canadian Link Belt Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*The Waterous Engine Works Co., Ltd., Brantford.
- TRAPS**
*C. A. Dunham Co., Ltd., Toronto.
*Canadian Morehead Mfg. Co., Woodstock.
- TROLLEYS**
*Richard-Wilcox Canadian Co., Limited, London, Ont.
*Northern Crane Works, Limited, Walkerville.
- TRUCKS**
The Gurney Scale Co., Hamilton.
*Northern Crane Works, Limited, Walkerville.
- TRUCKS, brick, tile and lumber**
*Waterous Engine Works Co., Ltd., Brantford.
- TRUCKS, fibre and reinforced**
*Beveridge Paper Co., Limited, Montreal.
- TRUCKS, motor**
*National Steel Car Co., Limited, Hamilton.
- TRUCKS, warehouse and factory**
The W. S. Mahaffy Co., Toronto.
- TRUCKS, steel, forge and foundry**
Hamman Steel Car and Engineering Works, Hamilton.
- TRUCKS FOR OFFICE AND VAULT USE**
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
- TRUNKS**
Lamontagne Ltd., Montreal, Que.
J. Eveleigh & Co., Ltd., Montreal.
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.
- TUBING, brass and copper**
*Booth-Coulter Copper & Brass Co., Ltd., Toronto.
Canadian Seamless Wire Co., Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.
- TUBING, Fibre**
*Beveridge Paper Co., Limited, Montreal.
- TUBING, gold and silver**
Canadian Seamless Wire Co., Toronto.
- TUMBLERS, foundry**
*Northern Crane Works, Limited, Walkerville.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
- TURBINES, steam**
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THE BOOTH-COULTER COPPER & BRASS COMPANY, LTD.
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MONTREAL CONVENTION, C.M.A., JUNE 12-13

Vol. XIX., No. 2

TORONTO, JUNE, 1918

\$2.00 per Year

INDUSTRIAL CANADA



ADVERTISING ! Bradstreet's statement that 84 per cent. of all failures are among non-advertisers is significant. Intelligent advertising has become an essential in every modern industry, but what shall the advertiser do in the face of the war situation when he finds it difficult to get goods to fill his orders? First of all, it should be remembered that the foundation purpose of judicious advertising is to fix indelibly the trademark in the public's mind. A let-up in that campaign must be fatal to any product. So, we find Mr. George H. Charls, vice-president of the American Rolling Mill Company, declaring the company's purpose to continue its advertising, although for two and a half years it had been unable to supply the demand for its product. "We are building," said he, "a permanent business edifice, and some day we would have to spend millions of dollars buying back the business and goodwill of our clients if they are forsaken in this emergency." Unless advertising is kept up without break the advertiser loses the results of the initial effort. Here is a warning to the advertiser who neglects the dull season in summer. When advertisements are fewest is the very time when a message to the public may get the most attention; provided, of course, that the character of the advertising deserves it. Many advertisers hold that it is good "psychology" to push the advertisement of a winter product in summer and of a summer product in winter.

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WINNIPEG
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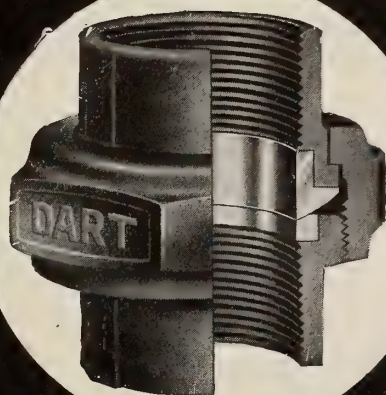
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or pull apart

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Induction
Motors,
Generators
Trans-
formers

No need to journey miles to hold a Convention, that will bring big results in your power equipment. Hold a Convention in your own office—let a qualified representative of the Canadian Crocker-Wheeler Company attend it.

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of work.
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Manufacturers and Electrical Engineers

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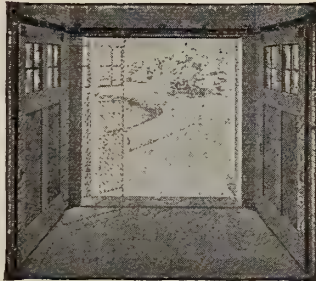


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"A hanger for any door that slides"

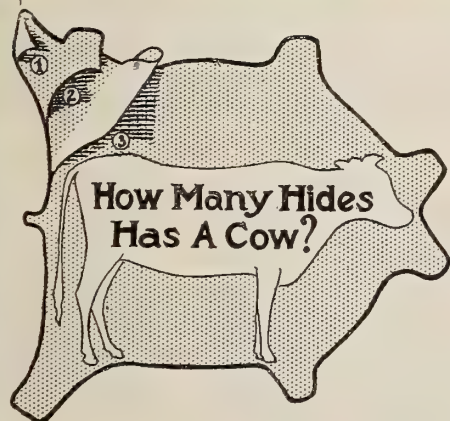


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TROLLEYS
ARE BEST
FOR ALL
SLIDING
DOORS**

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**FIRE DOOR HARDWARE
ALL STYLES WITH UN-
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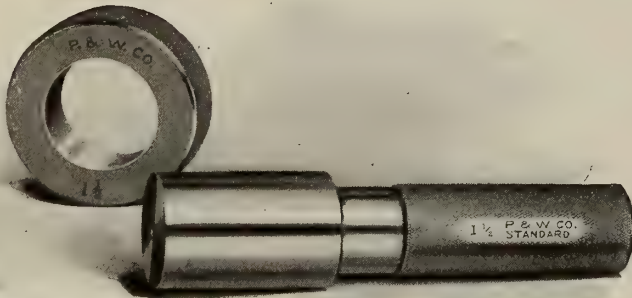
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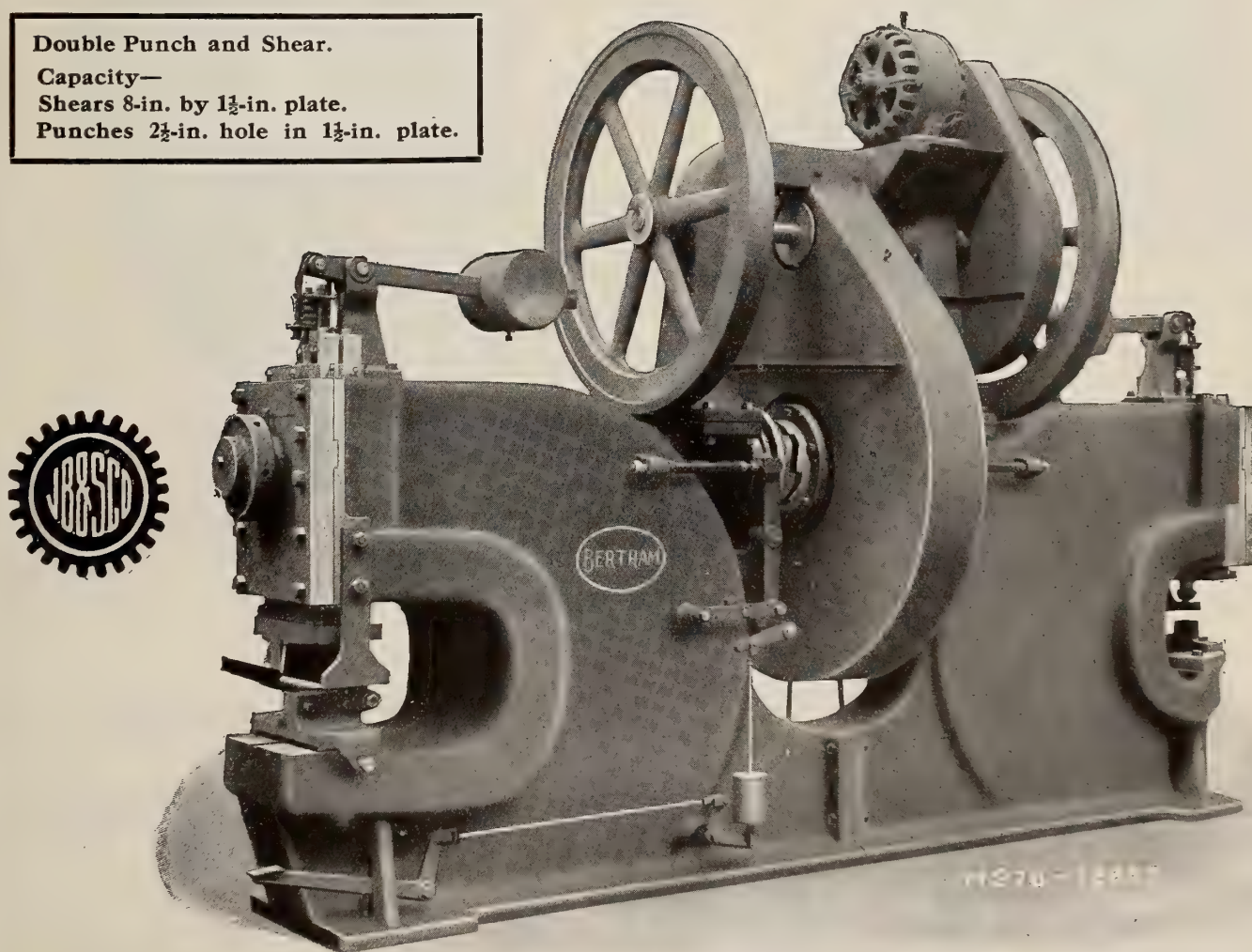
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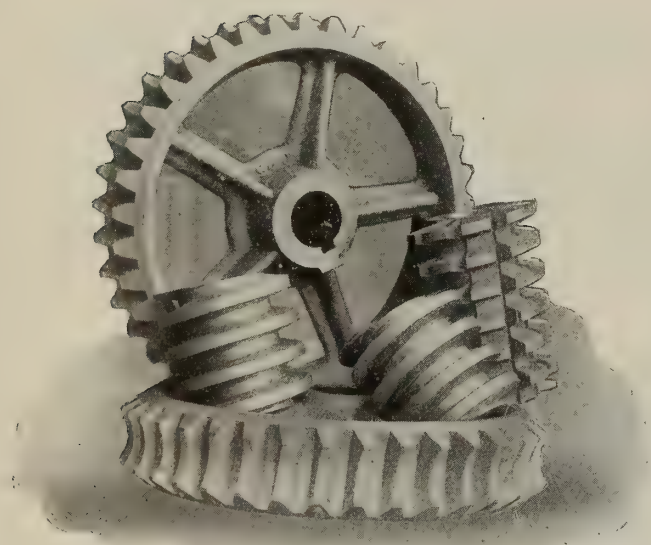
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Shears 8-in. by 1½-in. plate.
Punches 2½-in. hole in 1½-in. plate.



Worm Gears



Produced by the Hobbing
Process give best results.
Hamilton Worm Gears
are produced that way.



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the hob that cut the gears.

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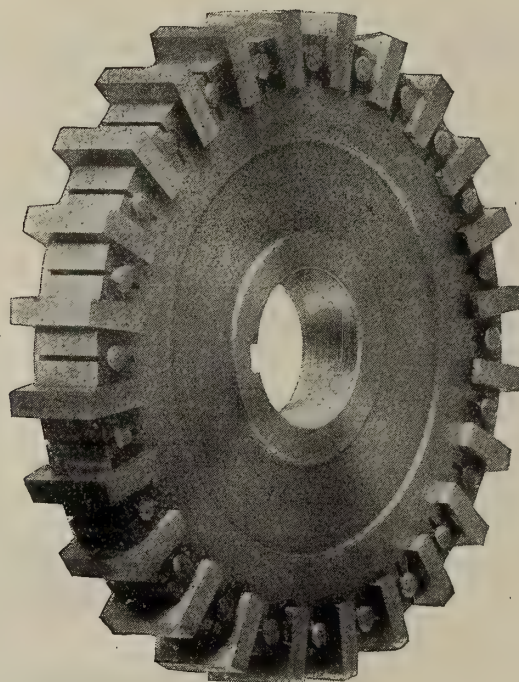
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Van Horne Street - TORONTO

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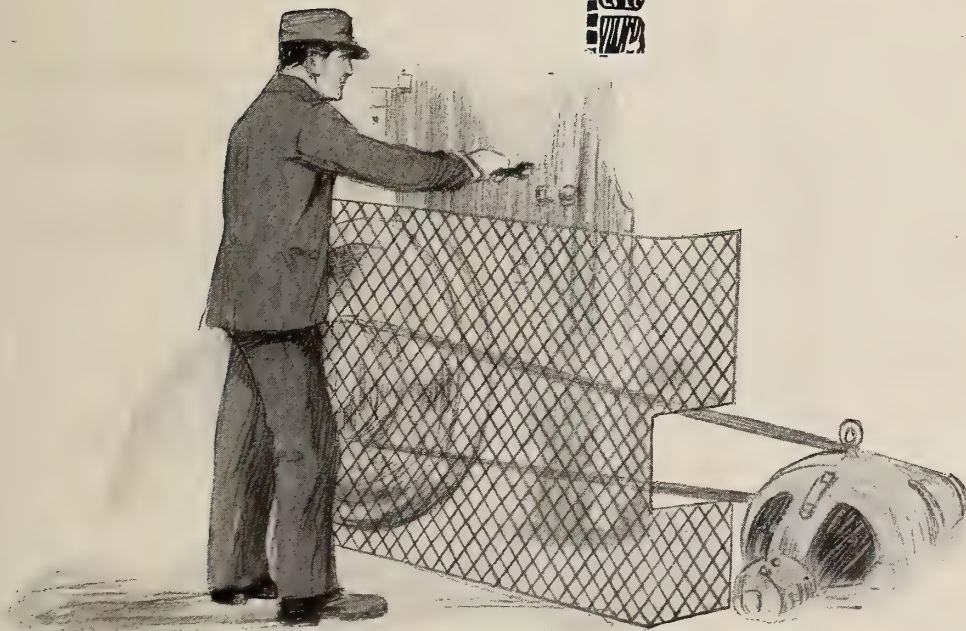
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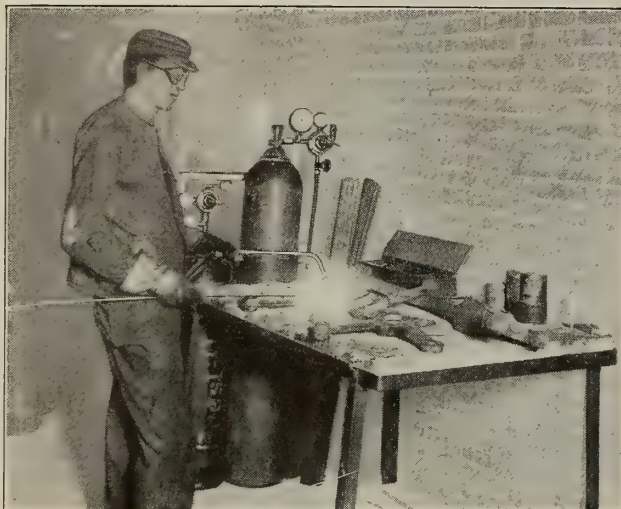
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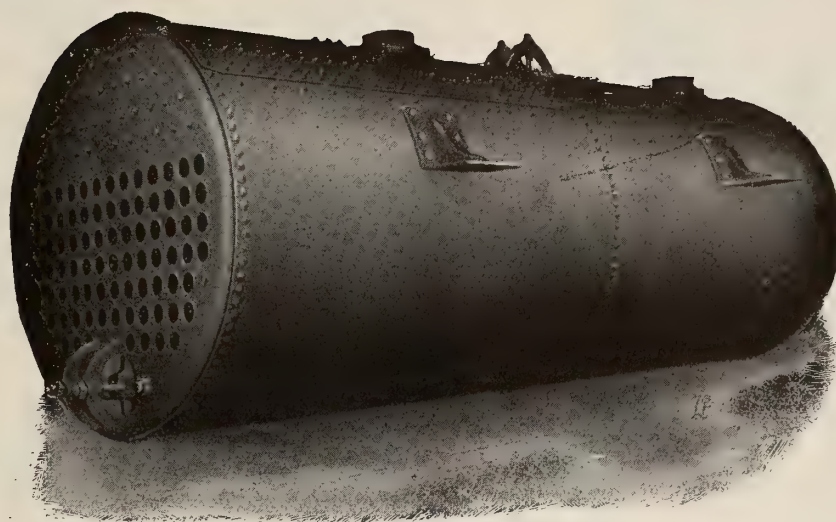
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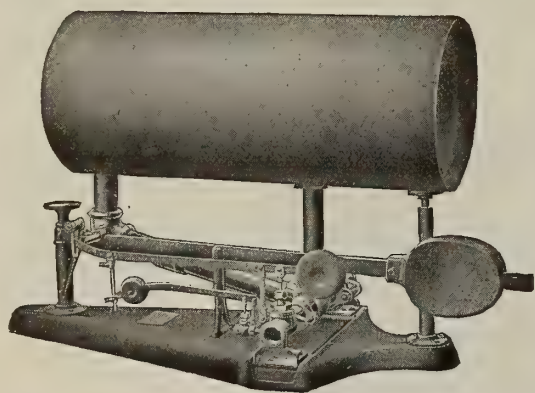
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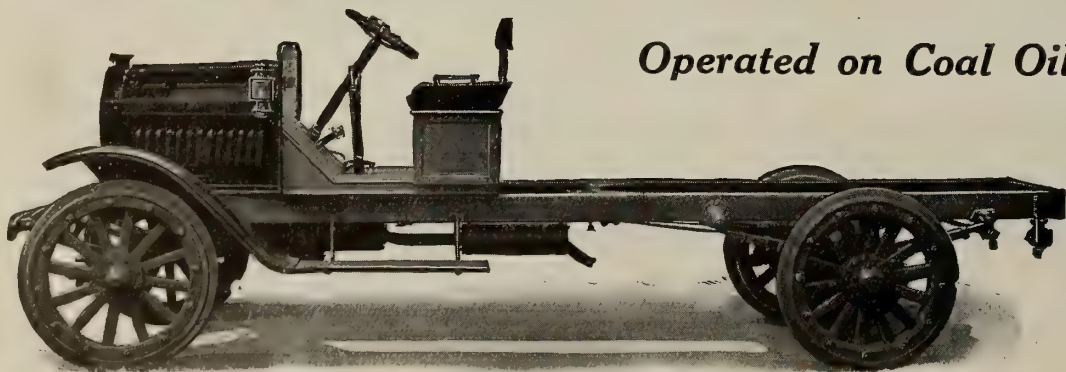
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Fig. 300

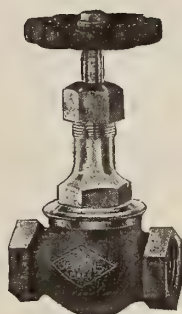


Fig. 106



Fig. 108

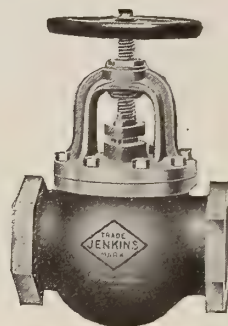


Fig. 141

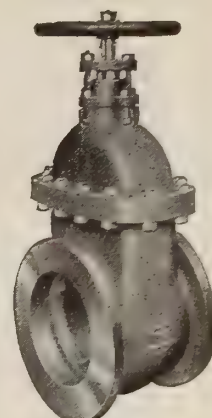
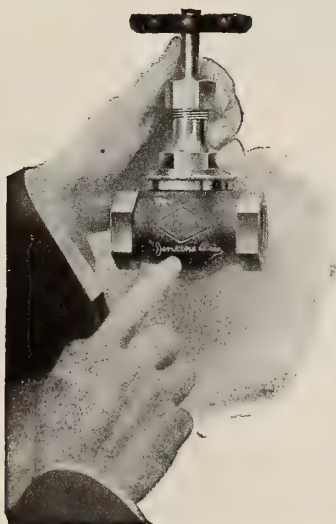


Fig. 402

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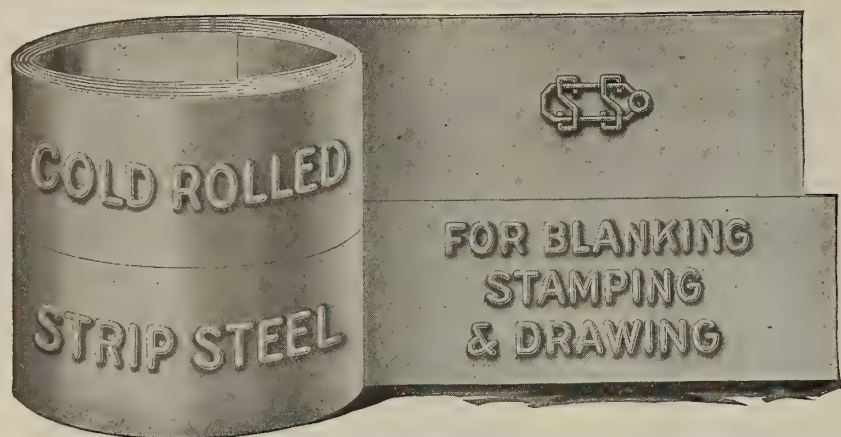
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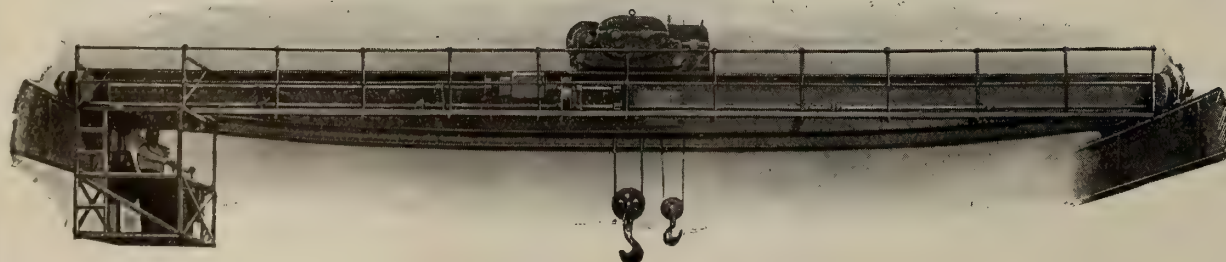
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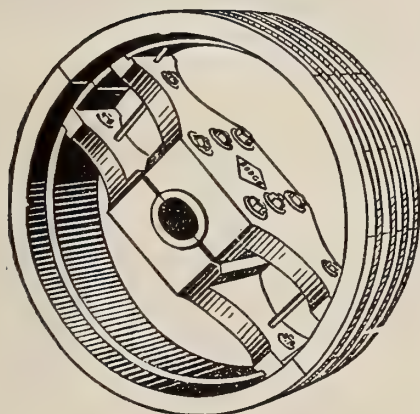
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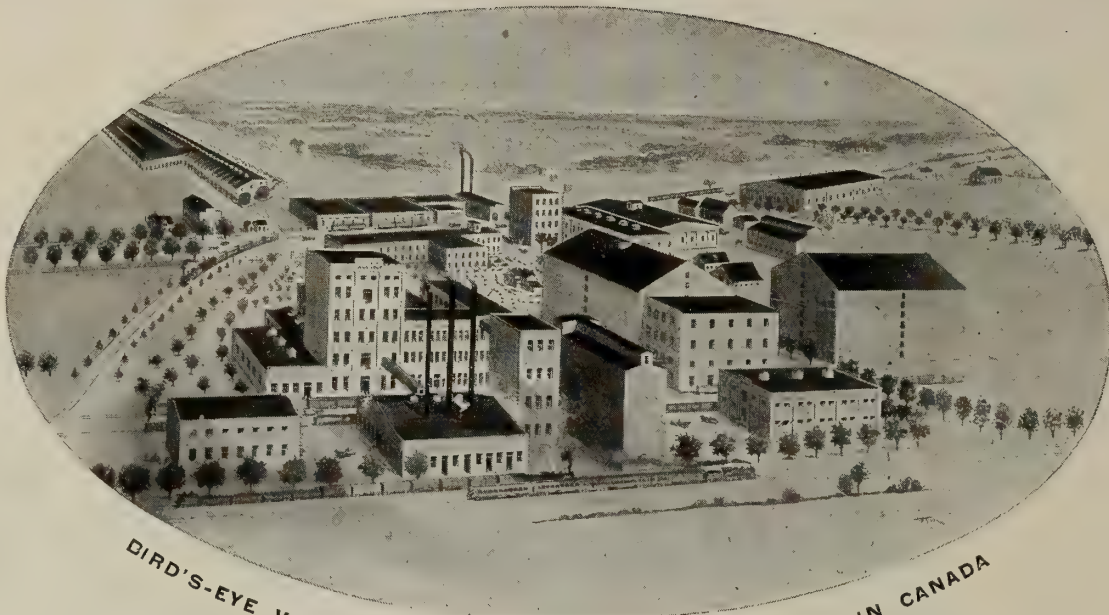
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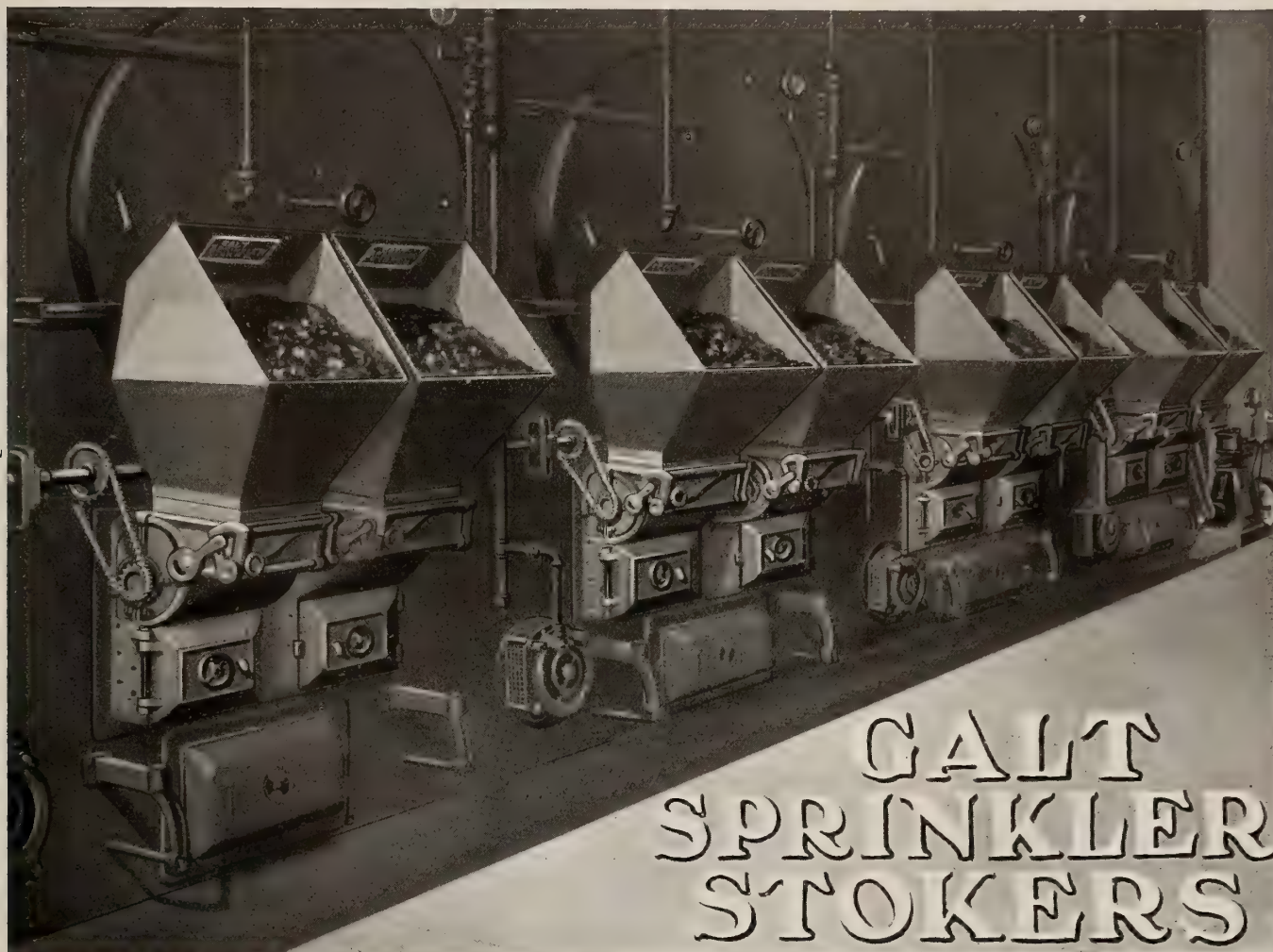
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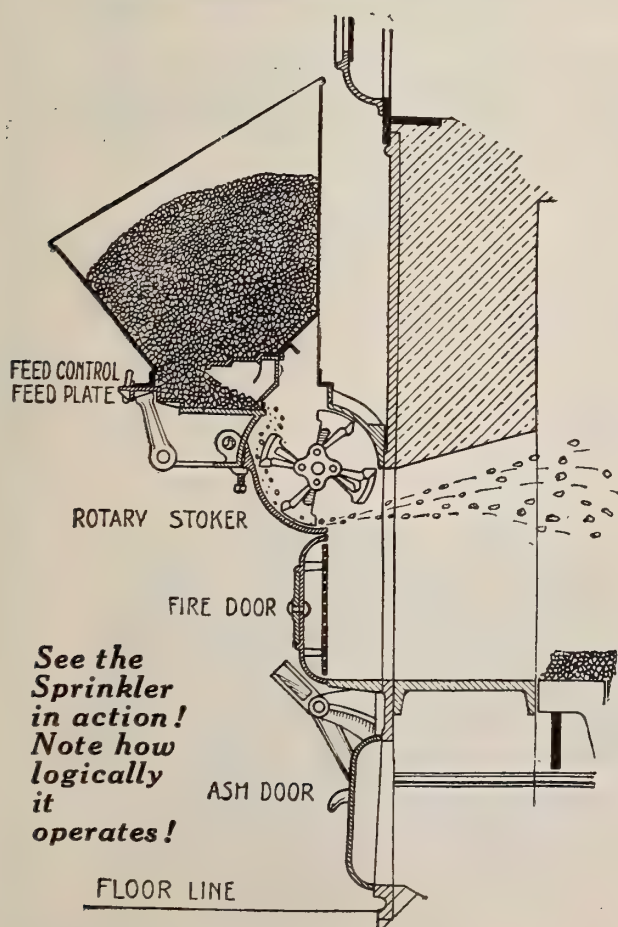
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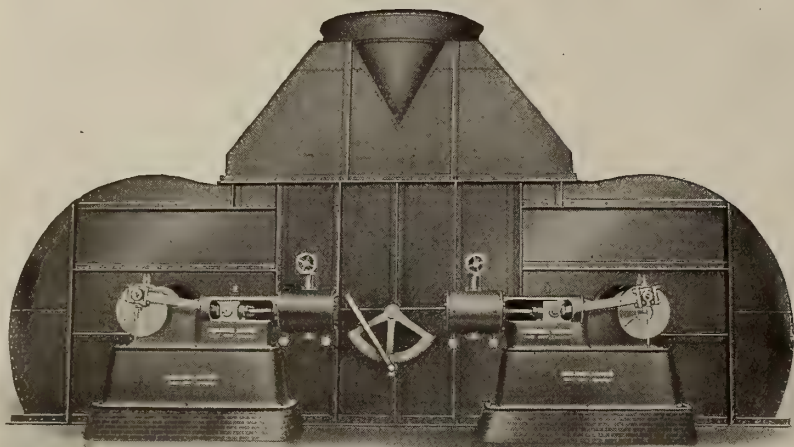
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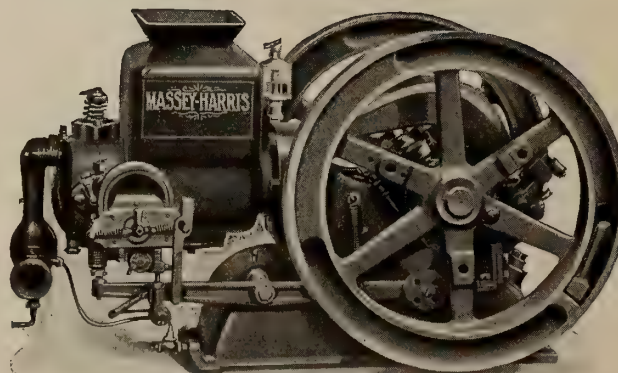
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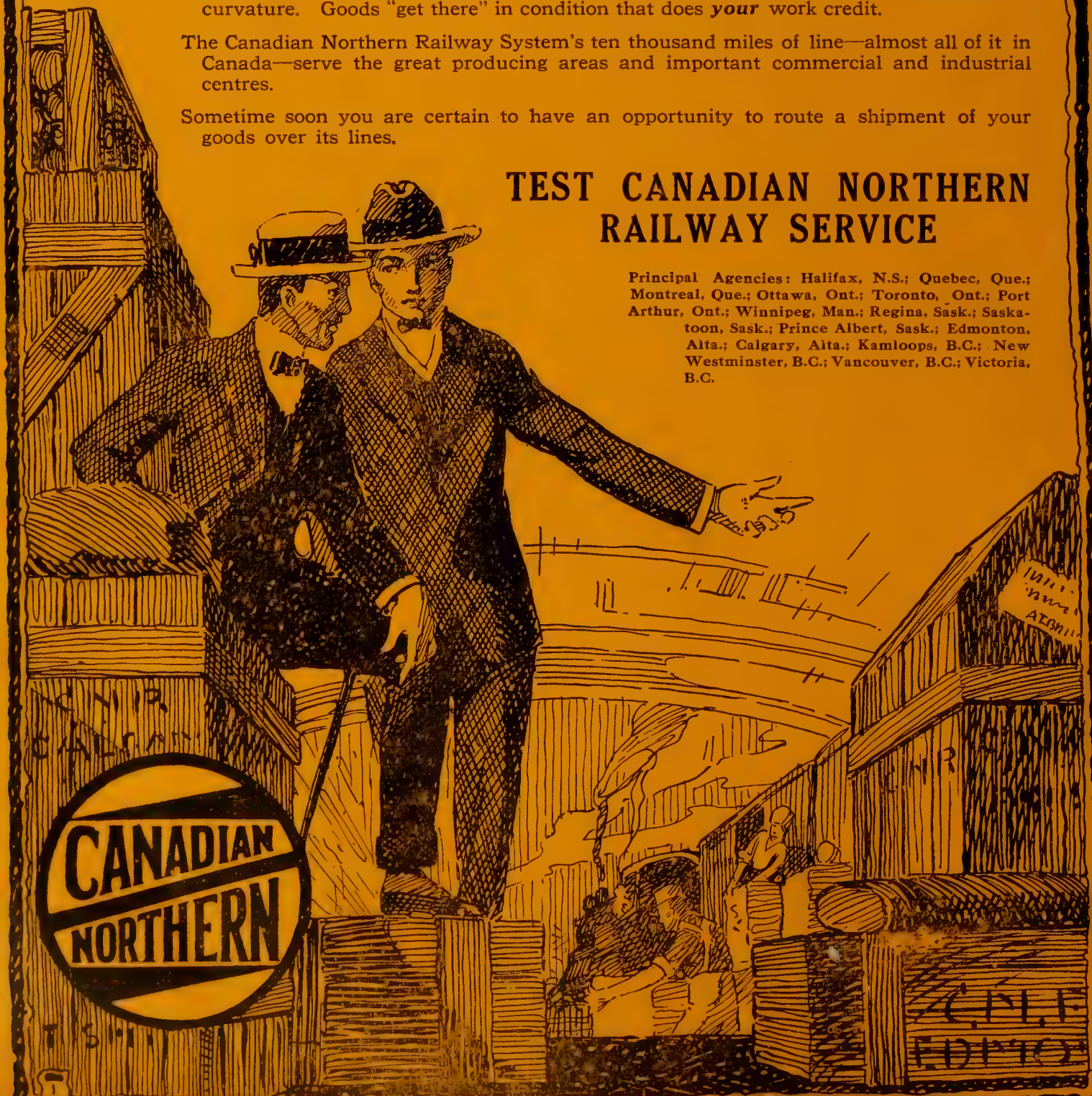
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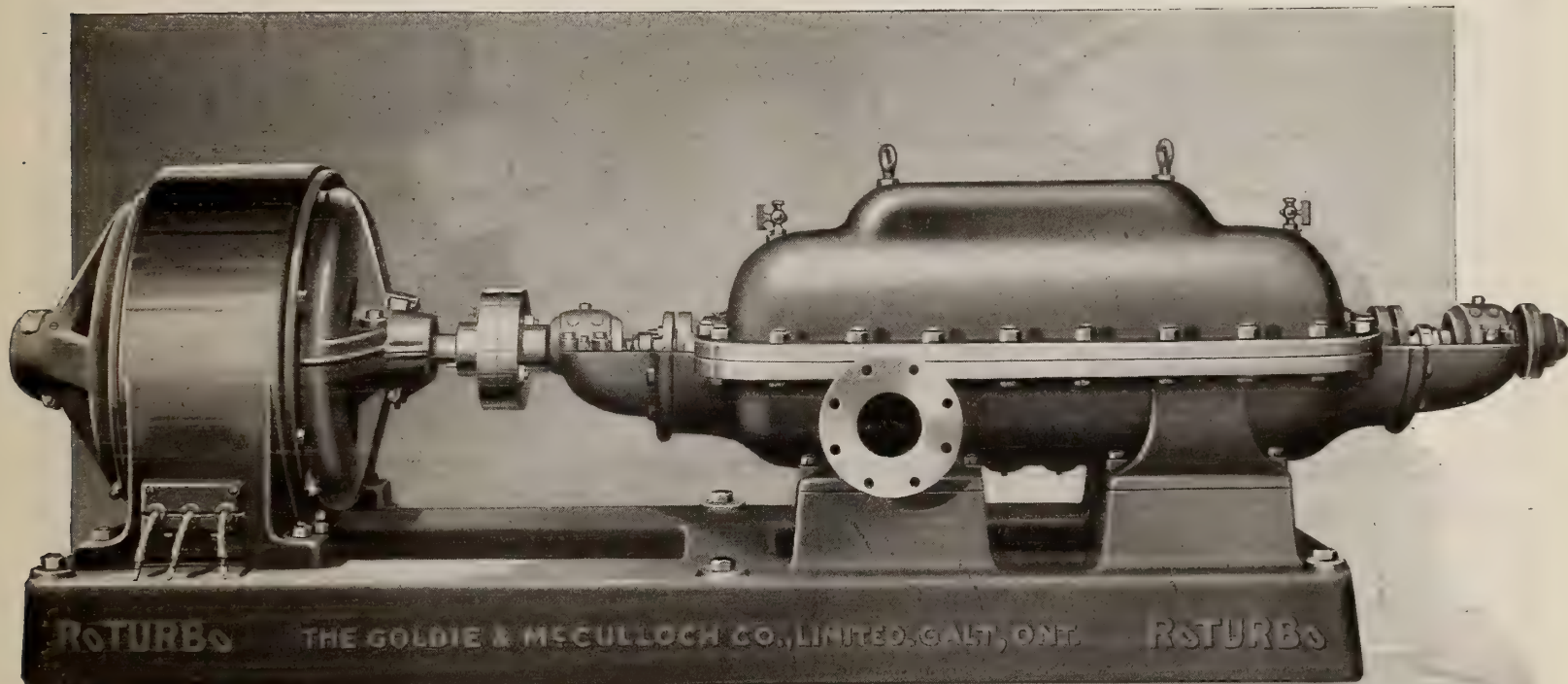
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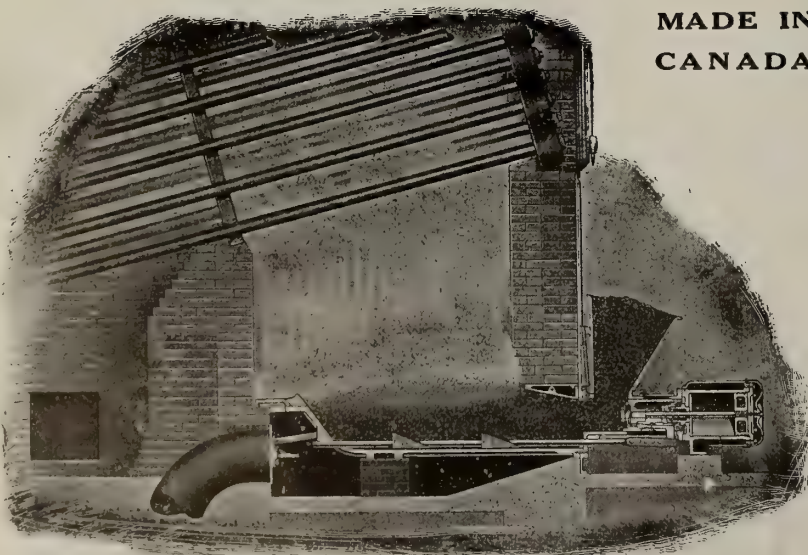
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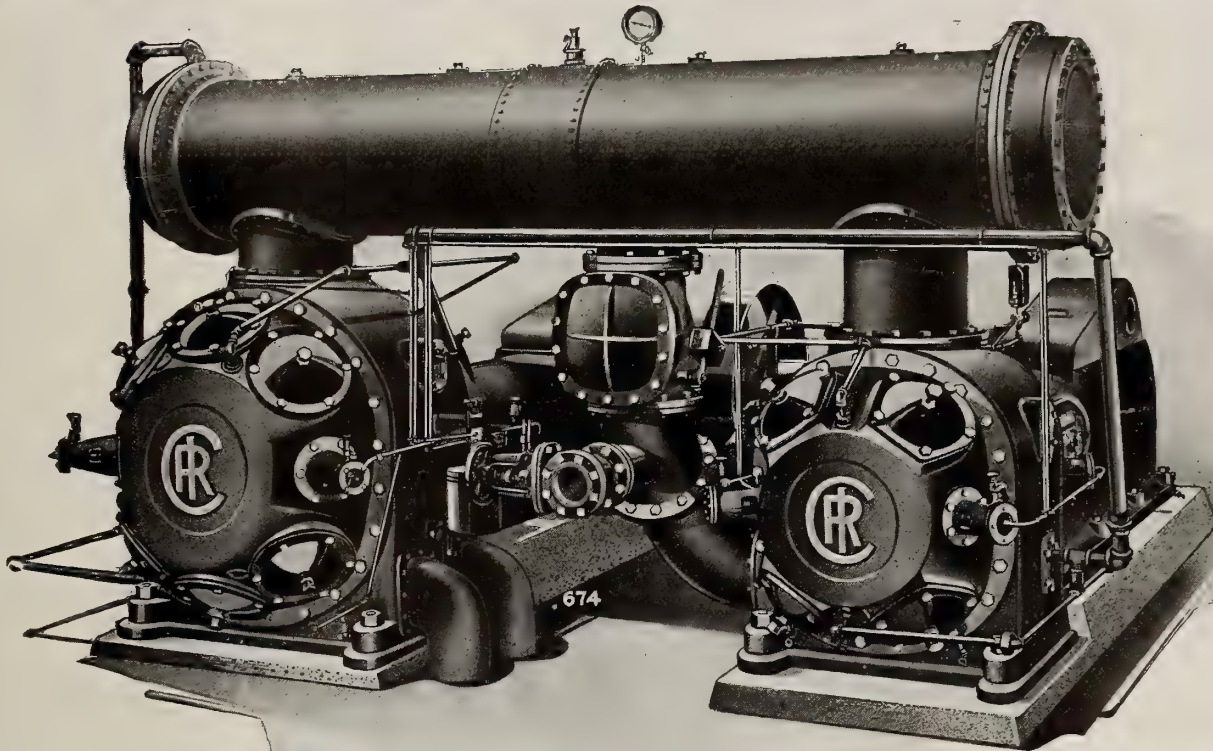
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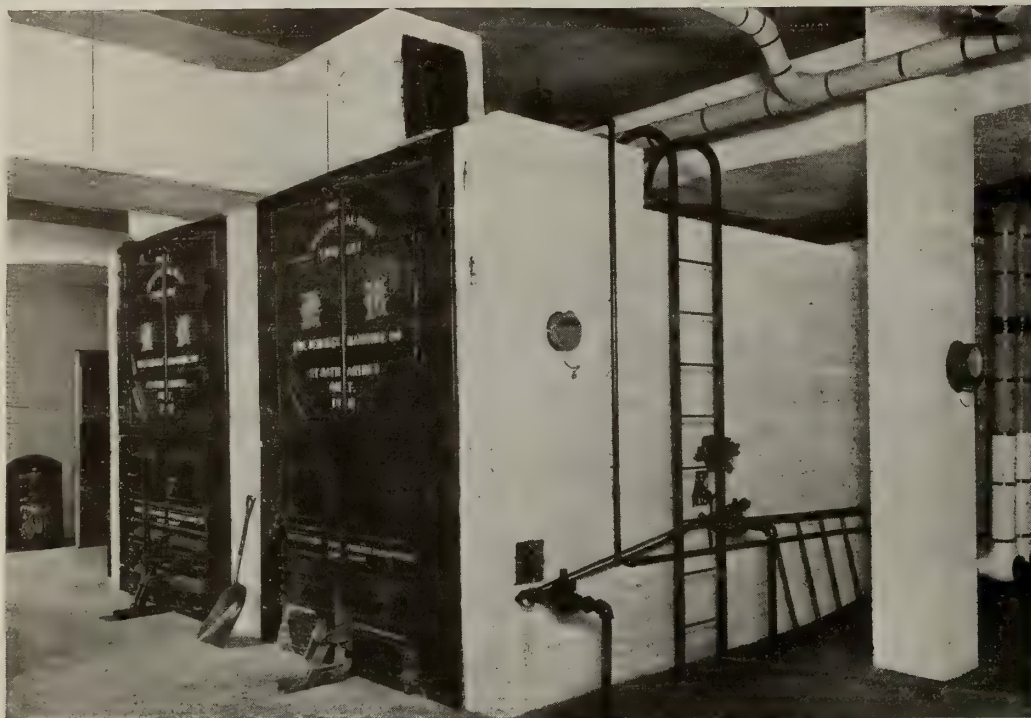
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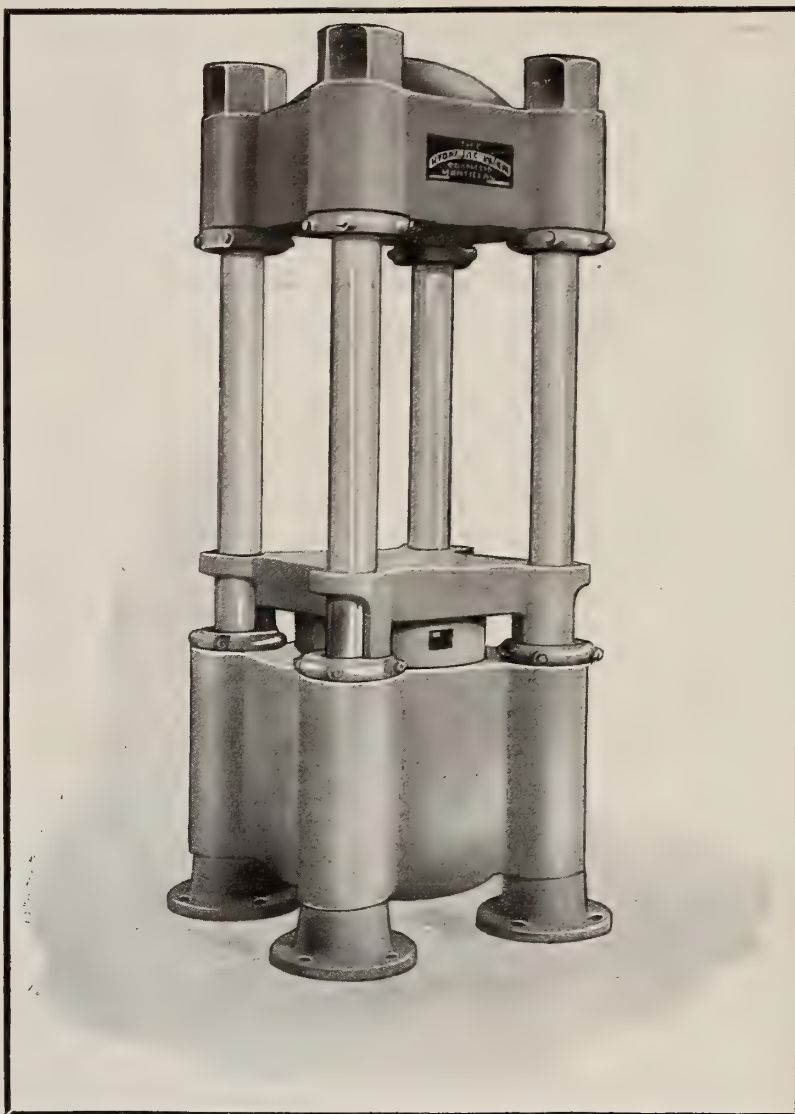
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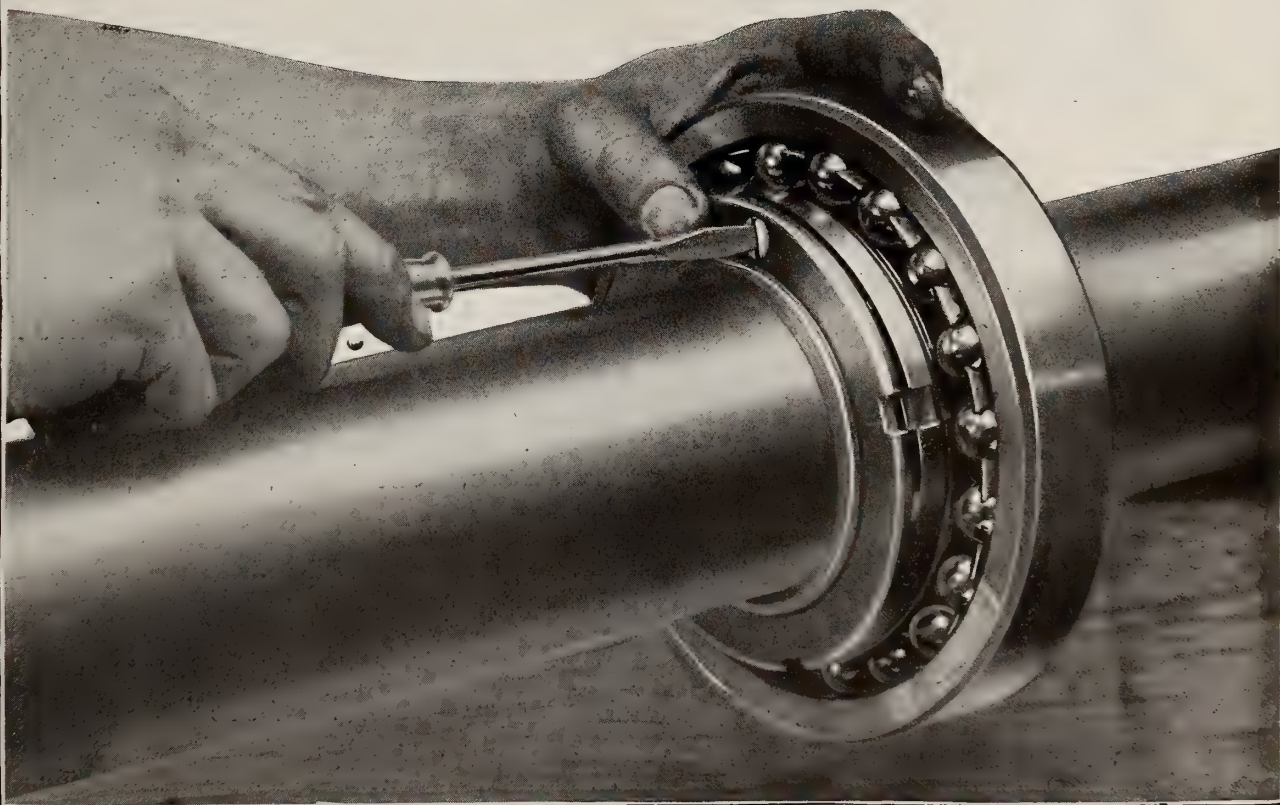
These Bearings are saving power in every industry. Let us send you our latest Hanger Catalogue No. 78 which tells all about S.K.F. Ball Bearings.

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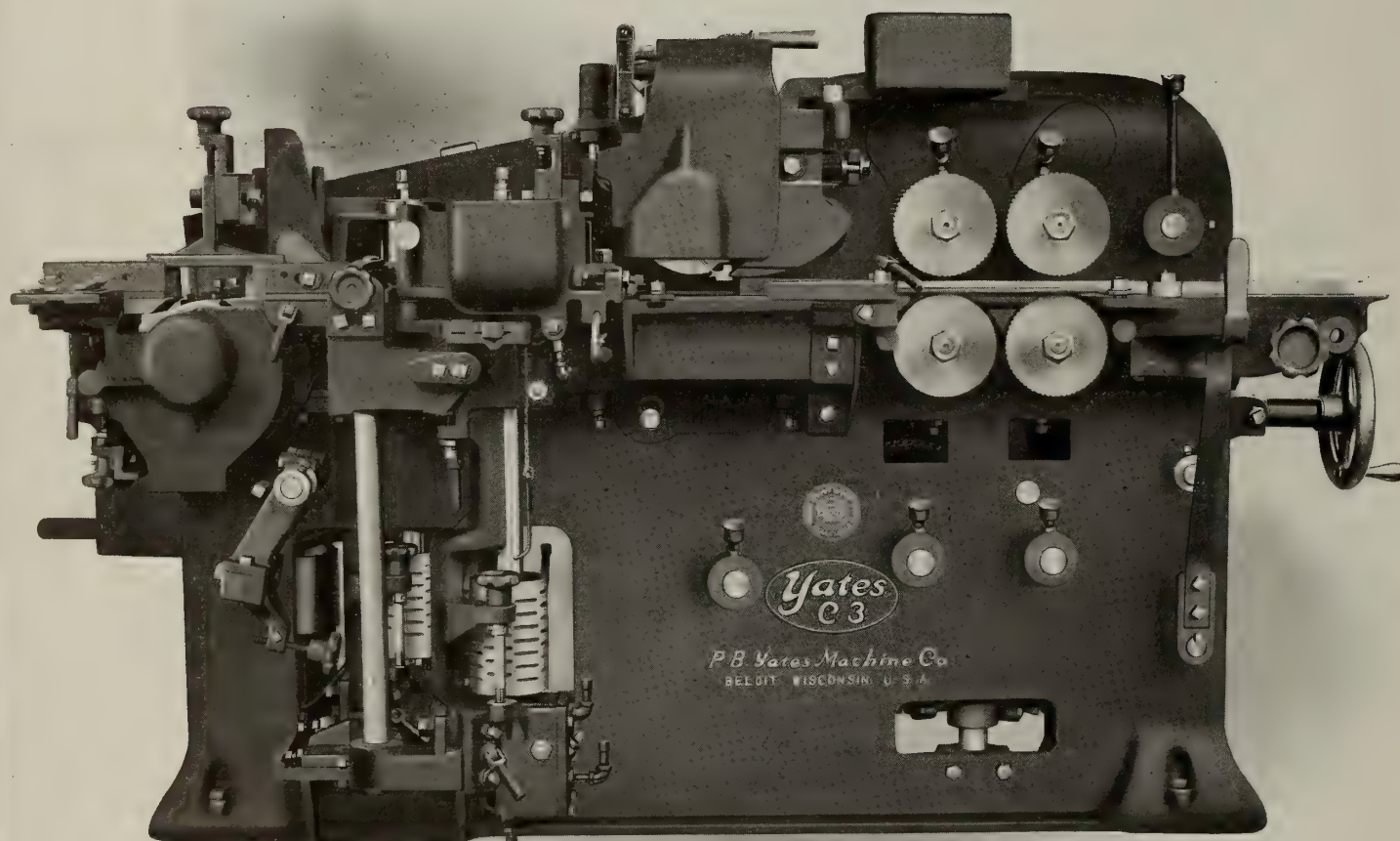
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Dunlop "Gibraltar RedSpecial" Belting



Abnormal Friction Pull vs. Elasticity of Friction

BETWEEN every ply of specially-selected, heavy Cotton Duck in Dunlop "Gibraltar RedSpecial" Belting is a layer of pure Rubber which, through a Dunlop calendering process, so permeates the fabric that it binds the several plies into one integral piece.

Some belt manufacturers offer to sell their product on the basis of "Heavy-Poundage in Friction-Pull" Test. To obtain the latter result it is not necessary to secure such an expensive Rubber Friction as is used in "Gibraltar RedSpecial." This fact alone ought to be a pretty good gauge of the value of the "friction-pull" test.

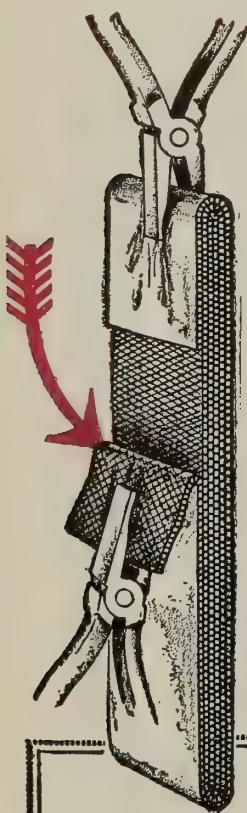
In buying "Gibraltar RedSpecial" you get the advantage of years of careful laboratory work on our part with this result: The friction is of that "just-right" elastic quality which allows for the give and take necessary in rounding the pulleys; hence the reason "Gibraltar RedSpecial" is known for maximum Power, Speed and Service.

Note the Short Grain Rubber Friction

This Belt Section illustrates a Heavy "Poundage-Pull" Friction. To secure this result the Friction Grain is short and stiff. Elasticity and Flexibility have been sacrificed to secure such a result.

Note the Long Grain Rubber Friction

Dunlop "GIBALTAR REDSPECIAL" has a Friction of Special Dunlop Rubber that retains its life indefinitely. "Note the long grain Rubber Friction," as illustrated. Elasticity has not been sacrificed for Abnormal Friction Pull.



UNLIMITED capacity for service is an intrinsic quality with Dunlop "Gibraltar RedSpecial" Belting. The success of nearly a quarter of a century in the manufacture of Rubber Products is built into Gibraltar. The original Made-in-Canada Red Rubber, Frictioned Surface Belting, "Gibraltar RedSpecial" has stood the infallible test of time in turning the wheels of industry in a multitude of Canadian plants from the Atlantic to the Pacific.

The Dunlop Unreserved Guarantee

If you have a difficult drive anywhere in your factory drop a line to our Head Office, or to our nearest branch, and we will send a man experienced in belt engineering to consider your requirements. If it is an instance where the "Gibraltar" Belting may be suitably employed we will recommend its use; and we will stand behind our recommendation with the fullest guarantee ever issued by a firm producing rubber products.

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High-grade Tires for Automobiles, Motor Trucks, Bicycles, Motorcycles, Carriages;
High-grade Rubber Belting, Packing, Fire Hose, and General Hose, Dredge Sleeves,
Military Equipment, Mats, Tiling, Heels and Soles, Horse Shoe Pads,
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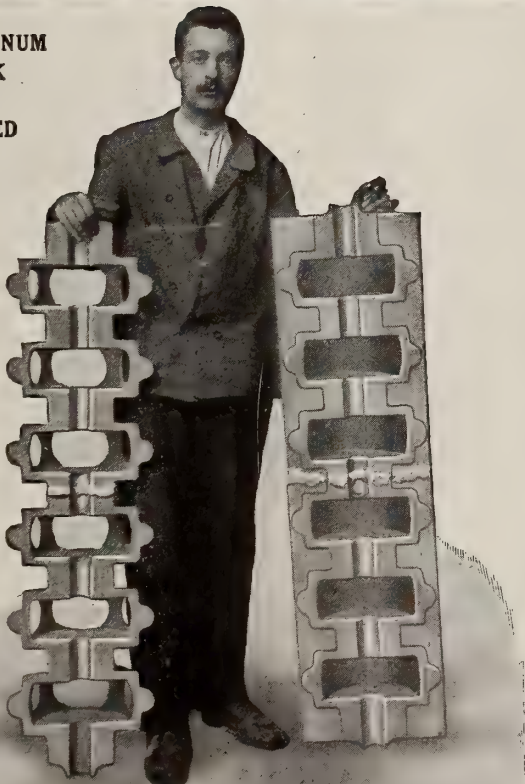
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whenever a problem arises, if it is a question involving the joining of metals (whether for manufacturing purposes or repairing broken equipment), welding the parts is almost invariably the best solution, both from an Economy and Efficiency standpoint.

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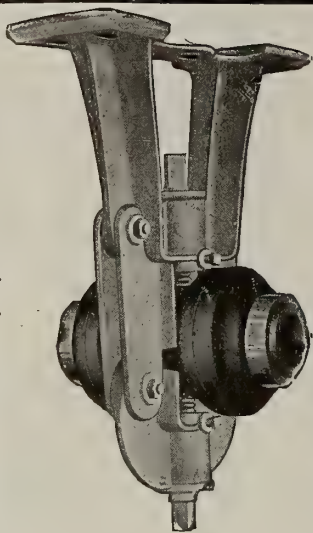
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YOUR BIT

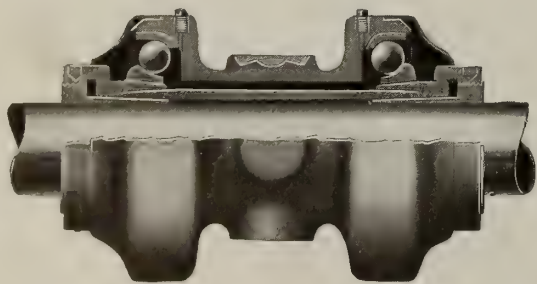
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save 20 per cent. of power by eliminating friction. If you are wasting power in transmission, you are wasting coal—one of the articles the Government requests us to conserve.

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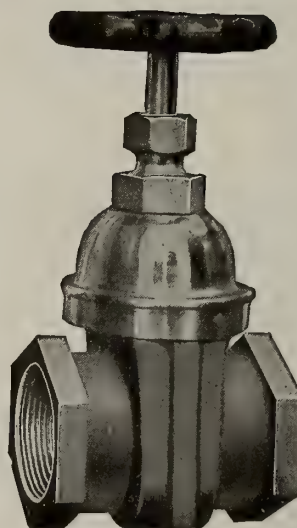
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HERE IS A Brass Gate Valve



You will find it always made from High Grade Steam Metal and beautifully finished.

They are not made of one quality this year and another next. Always reliable and worth the price you pay.

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VALVE SPECIALISTS

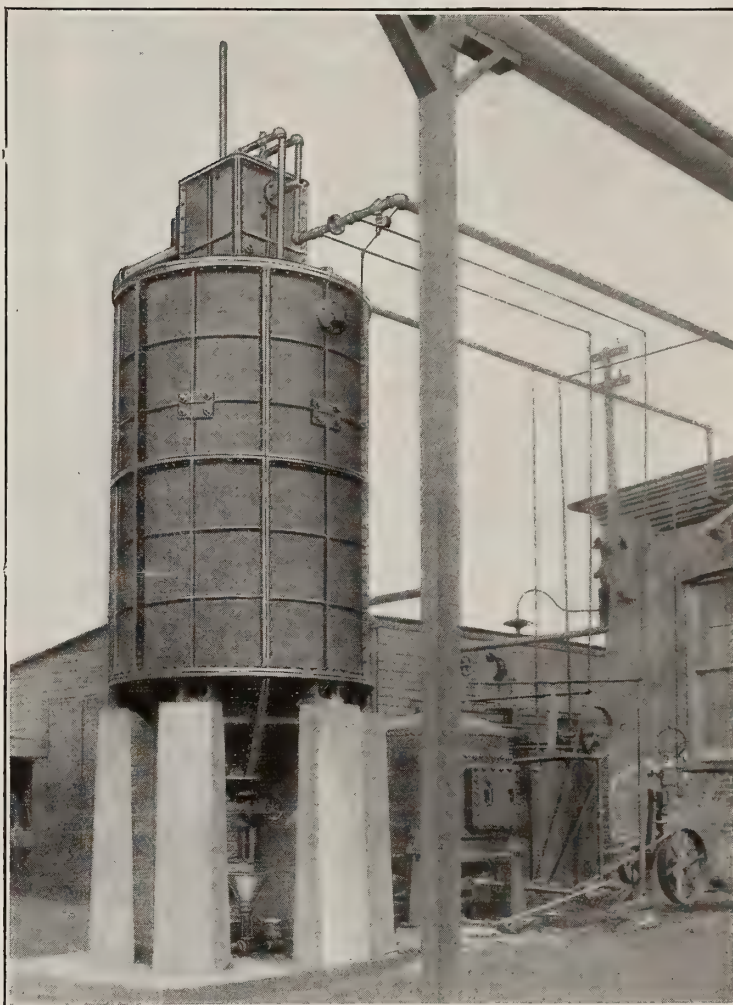
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THE LATEST DEVELOPMENT IN BOILER FEED WATER TREATMENT

The Sorge-Cochrane Hot Process Softener for treating boiler feed water represents a radical improvement and embodies the latest developments in the art of softening water. It differs from other systems in that the chemical reagents required for the transformation of the scale-forming and corrosive substances are added to the water while it is hot, that is, after it has been heated to boiling point by spraying through an open steam bath.

ECONOMIC BENEFITS

1. Fuel is saved by reason of heating the boiler feed water with exhaust steam to 210° Fahr. or higher (depending upon the back pressure carried), 1% being saved for each 11 degrees rise in temperature, that is, 10 to 15% altogether.
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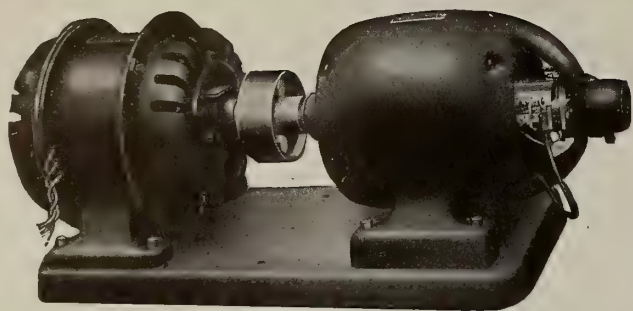
Hot Process Softener installed at a chemical works

Our Book "Hot Soft Water for Steam Boilers" gives tables of actual results in foundries, machine shops, auto factories, oil refineries, ice plants, steel works, railways, brass works, textile mills, and other steam plants.

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Power Plant Equipment, Mining, Crushing, Hydraulic and Milling Machinery, Contractors' Plant and Architectural Bronze and Iron Work.



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Tell us the service you want
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Are You Sure Your Electrical Wiring is Safe?

There is but one absolutely safe method of wiring. Install a CONDUIT SYSTEM — it will eliminate all risk of Fire.

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HAVE NO EQUALS

Conduits Company Limited
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Eleven Times Around the World

Over 600 miles of Lead-covered Telephone Cable was the output of our plant for one year.

The single telephone wire in this cable amounted to nearly a billion feet or enough to encircle the earth at the Equator more than seven times.

The supremacy of the Northern Electric Company as the largest makers of bare and insulated wires and cables for all purposes has never been questioned.

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Unequalled manufacturing and shipping facilities insure prompt deliveries.

The Shipping Department is one of the largest and best equipped in Canada. It can accommodate twenty-two freight cars.

Where electrical safety is vitally important

Aboard Uncle Sam's battleships too stringent care cannot be taken to prevent overloads and short circuits reaching the electrical equipment. This is effectively safeguarded against by the use of

ECONOMY renewable FUSES

No one can question for a moment that safety is the first consideration in the fusing of these circuits. What greater assurance could be offered of the accuracy and all-round dependability of Economy Fuses?

Now weigh the fact that ECONOMY renewable FUSES and "Drop Out" Renewal Links cut annual fuse maintenance costs 80%. A single order recently shipped to one navy yard saved the government over \$76,800.00. Smaller users enjoy the same proportionate saving.

Order from your electrical dealer. Write for Catalog 40

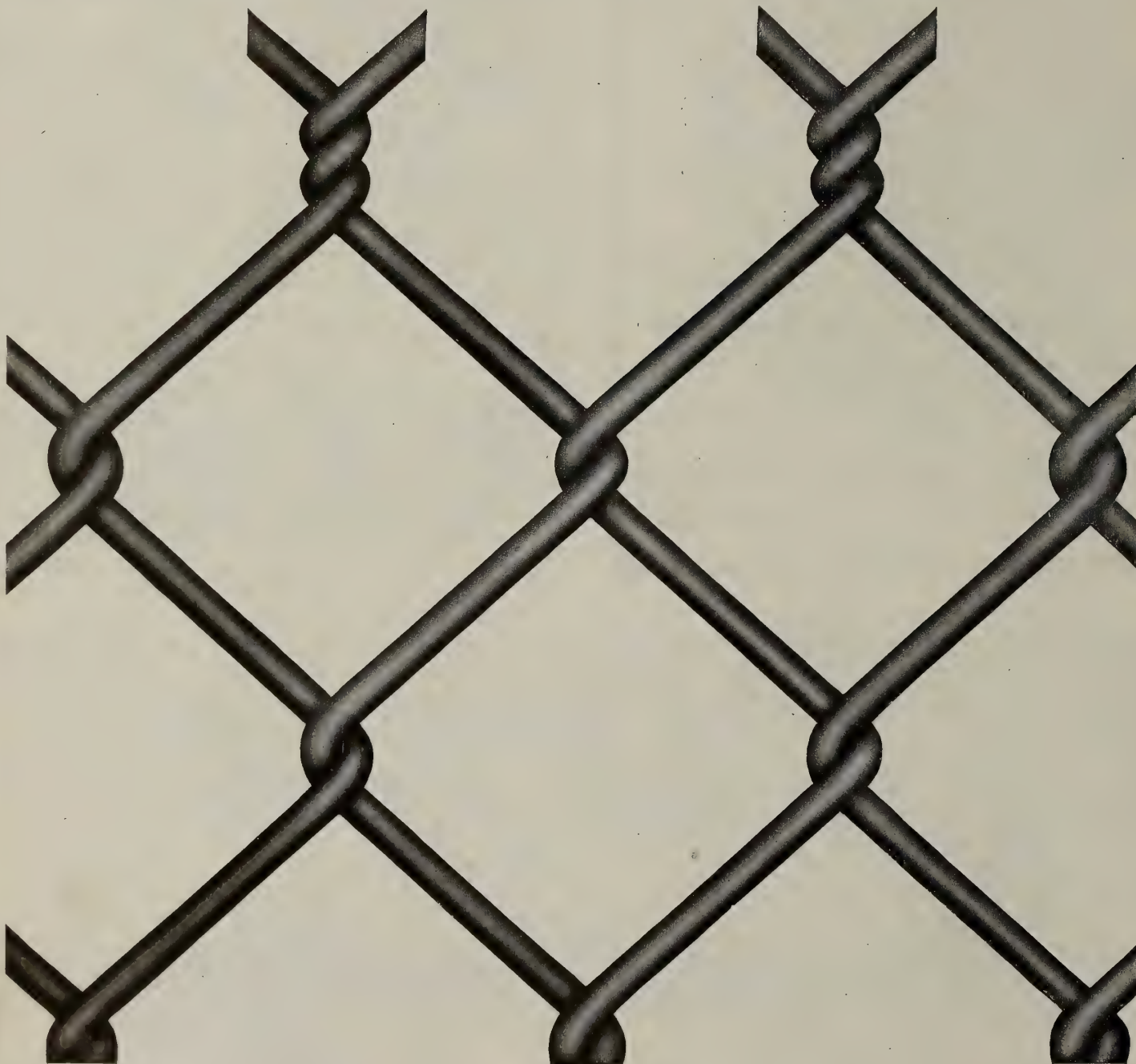
ECONOMY FUSE & MFG. CO.
OF CANADA LTD.

Manufacturers in Canada of S. & B. High Potential Fuses to 150,000 Volts



DENNIS CHAIN LINK FENCE

PROTECTION FOR FACTORIES



(Photographic reproduction—shows actual size of wire and mesh)

MILE after mile of this new protective fence is being erected as fast as it can be put up. There will be no "mysterious fires" reported, no morning newspaper accounts of "unaccountable explosions" in the plant enclosed by a steel wall of DENNIS Chain Link FENCE. Built for one purpose, that of keeping out undesirables, compelling all to approach your plant by a set, centralized entrance. This fence is MAN-proof. It surrounds your premises with an insurmountable wall of steel, and intruders can't go through, climb over or get under. There is a perfect "zone of safety" about any plant protected by DENNIS Chain Link FENCE. Overhanging steel arm, bristling with vicious barbed wire, adds to security. Write for illustrated folder. The epidemic of "queer fires" and "strange thefts" and "destructive explosions" throughout the land is urging YOU to take steps before the untoward event happens.

The Dennis Wire & Iron Works Co., Limited - London, Canada

Westinghouse

Electric Ranges



Type 3-19 Automatic Electric Range with Clover-Leaf Set and Cooker Pot in Small Oven and Turnover Toaster Attached

These ranges have the exclusive economical features of full automatic control by attached clock and thermostat. They are strongly constructed throughout, all parts being of metal. For the ovens the best, practical, rust-resisting metal known is used, covered on the inside with an aluminized finish, which is a further protection against rusting.

The ovens are heavily insulated with the finest grade of rock wool, which reduces the escape of heat to a minimum. A specially designed heat distributor produces an even temperature.

All parts of the range are readily accessible. Everything can be removed from the ovens, and the ovens flushed with water with no evil effects.

Our Catalogue 8-D describes the full line. Send for a copy.

Canadian Westinghouse Company, Limited, Hamilton, Ontario

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105 Hollis St.

FORT WILLIAM
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WINNIPEG
158 Portage Ave. E.

CALGARY
Grain Exchange Bldg.

EDMONTON
211 McLeod Bldg.

VANCOUVER
Bank of Ottawa Bldg.

Made in Canada

Tarvia
Preserves Roads
Prevents Dust-

Tarvia in York County

The York County Highway Board has been using Tarvia ever since 1914. Tarvia has made good as it always does, saving the roads from damage by automobiles and wagon-traffic and saving the taxpayer's money by the same process. One of the accompanying pictures shows a stretch of the 1914 work. The photograph is recent and exhibits a stretch of macadam that is still perfect in contour, not damaged by frost or automobiles and needing little or nothing in the way of maintenance and repairs.

York County has constantly extended the use of Tarvia. It is rapidly becoming a Tarvia county. For example, Yonge Street already has been treated with Tarvia for thirteen miles of its length. There are many such cities, communities that use Tarvia on all their principal roads as a matter of settled policy for the sake of the large economies and superior road-surfaces that are thus obtained.

There is a Tarvia and a Tarvia method for every macadam-road problem.



Yonge Street, York Co., Ont., treated with "Tarvia-B" in 1916 and 1917. Thirteen miles of this road are treated with Tarvia.



Don Mills Road at Todmorden, constructed with "Tarvia-X" in 1914.

Tarvia is a coal-tar preparation shipped in barrels or in tank-cars. It is made in several grades for varying road conditions.

"Tarvia-A" is applied hot for resurfacing a road already built.

"Tarvia-B" is used cold. It sinks readily into the road-surface, yet it is strong enough to bind it firmly together. It is the cheapest form of road maintenance yet invented.

"Tarvia-X" is to be used in constructing a new road.

Let us send you our literature showing roads all over the Dominion that have been built and treated with Tarvia.

Special Service Department

This company has a corps of trained engineers and chemists who have given years of study to modern road problems. The advice of these men

may be had for the asking by any one interested. If you will write to the nearest office regarding road problems and conditions in your vicinity, the matter will have prompt attention.

The **Barrett** Company
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INDUSTRIAL CANADA

ISSUED BY

The CANADIAN MANUFACTURERS ASSOCIATION.

INCORPORATED.

Vol. XIX.

TORONTO, JUNE, 1918

No. 2

INDUSTRIAL CANADA

Issued monthly as the official publication of the Canadian Manufacturers Association (incorporated), and devoted to the advancement of the industrial and commercial prosperity of Canada.

SUBSCRIPTION

Two Dollars per Year Single Copies 20 cents
Advertising Rates made known on application

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Industrial Housing

THE publicity given to the question of Industrial Housing at the Annual Meeting of the Toronto Branch on the 15th inst., promises to bring results with most gratifying despatch. Comparatively early in the war it was realized in Great Britain that the war had to be fought by the civil forces at home as well as by the men standing in the trenches and that a necessary part of the equipment of the civil forces would be good housing accommodation. The necessities of war and of strengthening the national structure so as to enable it to withstand the consequences of war, has created a new outlook in such social questions as housing and town planning.

Premier Sir William Hearst was quick to realize the fact when a deputation representing the Canadian Manufacturers' Association, the Toronto Housing Co., and the Great War Veterans' Association, waited upon him to urge governmental action in view of the increasing difficulty of the problem as the discharged soldiers arrive in large numbers. Sir William suggested the formation of a Housing Branch connected with the Ontario Resources Committee, which has already an efficient organization

and an experienced staff. He further invited the deputation at once to form itself into a nominating committee and to send in to the Government nominations for suitable men to undertake the consideration of the housing problem, not only as to Toronto, but throughout the Province of Ontario.

Why Impute Insincerity?

IS there no such virtue as sincerity in the world that suspicion should attach to every effort of patriotic Canadians to do something for the welfare of their country? We are faced with exceedingly serious problems, not only to-day when the war is approaching a most critical stage but in the days after the war when world-shaking readjustments are bound to occur. A number of intelligent citizens, realizing that there is no time like the present to take precautions, get together with an idea of forearming the country for the period of uncertainty that lies ahead. No sooner do they do so than there is a howl of alarm. It's all camouflage, rises the cry from various quarters. These men are not patriots; they are a set of highway robbers masquerading in the guise of honest citizens. Don't believe them for one minute but be warned and have none of their quack remedies.

These cries of alarm, which of course are uttered by men who put patriotism above every other sordid consideration, savor not a little of those vociferous protestations against the necessity of any warlike preparations in the days before militaristic Germany plunged the world into the present orgy of blood. Prior to 1914, it was a crime in the eyes of a good many honest people even to suggest that there could be such a wicked thing as war and, when certain far-sighted individuals uttered grave warnings, they were denounced as hypocrites who were more interested in the dividends of munition companies than they were in the welfare of their fellow-countrymen.

It is to be hoped that we will not so soon forget the grave lesson taught us by the war and that some measure of fairness may be accorded men who are earnestly trying to do their duty in the present crisis. There may be differences of opinion—wide differences perhaps—as to the best means of keeping Canada prosperous in the days

before us but certainly no good object is to be gained by attributing insincere motives to those eminent Canadians, who have formed themselves into an association for the safeguarding of the nation's interests in the time of trial that will follow the war.

Industrial Research Drags

THERE is a good deal of feeling among Canadian manufacturers over the lack of enterprise being shown in this country in the matter of industrial research. There has been a lot of talk, but very little action, and meantime, the end of the war is approaching. As was pointed out by Sir John Willison in his address before the Toronto Branch, some people seem determined to prevent the discussion of any other topic than the winning of the war. While it is very well known that Germany has been preparing to deal with after-the-war conditions even before the war started. We were behind in war preparations when the conflict started and, if we are not alert, we will be still farther behind when the trade war begins after the present military campaign is over.

It is true that an effective groundwork was laid for useful industrial research when the Advisory Committee was appointed, but this organization is so badly hampered for lack of machinery that it is making very little progress. Other nations are spending millions along similar lines to those for which the Canadian organization was designed but we in the Dominion have only appropriated a few thousands to finance this vitally important work. For some reason there is a disinclination to back it up adequately, and as a result we are getting nowhere. Is it not time that the strongest representations were made that steps should be taken to do adequate justice to the pressing problem of industrial research?

A Made-in-Canada Sale

THE effort of the H. J. Daly Co., Limited, of Ottawa, to popularize "Made-in-Canada" goods deserves the hearty commendation of Canadian manufacturers. During the week of May 6, this department store in the capital staged a special Made-in-Canada sale and gave demonstrations and exhibitions of goods the product of Canadian industry. The selling campaign extended to the company's advertising in the daily papers, where full-page space was taken to tell about the various lines of Canadian manufacture obtainable in the store.

"We are doing this for two reasons," stated the company. "First, to sell goods, second, to bring home to the people of Ottawa the fact that they may buy of Canadian manufacture all the articles they require for their daily needs." The last statement utters a truth which needs to be driven home with all possible force.

"When the war drums cease to beat and the boys come back bringing peace with victory," says one of the campaign advertisements, "the problem of finding employment for them will tax all the resources of statesmanship. By the increased manufacture of many of the things we now import, Canada could face the future with greater calm and courage. The time has come to stimulate public interest in things Canadian and every good Canadian will see the importance of giving a preference to the home manufactured article. He helps Canadian production best who buys Canadian products."

Arguments similar to this appeared in each day's publicity the cumulative effect of which, together with the featuring of "Made-in-Canada" goods in the store itself, must have been of great service in popularizing the products of Canadian industry. Other retail establishments might advantageously copy the scheme thus devised by this Ottawa departmental store, both as a means of stimulating trade and of furthering a worthy patriotic idea.

Houses Must Be Provided

REPORTS from practically every industrial centre in Canada indicate a serious shortage of housing accommodation. The situation is the outcome of those extraordinary conditions which have existed since the war started. At first there was the contraction of business resulting in the doubling up of families and other devices to save rent. This was accompanied by an almost complete cessation of house building and that, unfortunately, at a time when any number of new houses could have been run up very cheaply. Then came the industrial revival occasioned by the receipt of an increasing number of war orders and, with the growing prosperity of the workmen, empty dwellings began to fill up again and rents to rise. Finally, with the flood-tide of war-time business, which drew thousands of people to the industrial centres, there has come a time when a very real shortage of houses exists. In the meantime the dearth of labor and the abnormal cost of all building materials has retarded the erection of new houses so that the supply of dwellings is now very much smaller than the demand.

That the country must have more houses for the accommodation of its work-people is a matter of the utmost importance. They are needed now, they will be needed after the war. Private enterprise seems unable if not unwilling, to shoulder the expense and risk of erecting enough houses to fill the present need and, in the emergency, the Government itself should do something to solve the problem. Just how the difficulty can be adjusted is matter for the deliberation of the experts, but there must be a way out is evident. We bespeak the Government's earnest attention to this vital matter on which so much of the Dominion's future well-being depends.

Fire Waste Must Be Stopped

EDUCATIONAL effort towards the prevention of fire waste is desirable and, to a certain degree forms an effective means of reducing the loss occasioned by the ravages of the fire demon, but it is only a partial remedy. We have been advised time and time again of the seriousness of the menace and urged to take all possible steps to prevent its spread. Tons of printed matter have been circulated in this educational campaign—all very good and useful—but still the fires rage and millions of dollars worth of property go up in flames every year.

Education must be supplemented by some more effective force. It is all very well to say, take care, take precautions. What is needed is some penalty for carelessness, some punishment for those who do not take all possible precautions to prevent the destruction of property by fire. There must be a rigid enforcement of regulations governing fire protection. Not until the careless and indifferent are brought up sharp by the knowledge that they will personally have to suffer if they permit dangerous conditions to continue will there be any wholesale reduction in the fire loss of the country.

In the days before the war, people were certainly far less concerned about the value of conservation than they are to-day. The margin between demand and supply is now becoming so narrow that even the most indifferent are beginning to realize that even a small loss may have a most serious effect. That is why it is now easier to awaken the public to the need of taking steps to save property from destruction. All true patriots will welcome the enactment of stringent laws making it a criminal offence to permit conditions that may conduce to fire loss, either big or small.

A Cunning Attempt at Misrepresentation

BY their methods ye shall know them. When the Independent Labor Party of Canada undertakes, as it proclaims, to "fight the war for democracy in Canada," the honesty of its purpose should surely stand revealed in the uprightness of its methods. Otherwise, as little faith can be placed in its propaganda as in the dishonorable policies of the unprincipled Huns.

Ordinarily it would be our policy to ignore the attacks of the Independent Labor Party, an organization which, in justice to the great mass of Canadian workmen, should not be confused with the main body of organized labor, but its publication of a bulletin purporting to give the views of this paper on the much discussed subject of labor and capital, calls for a word of explanation to members of the Association.

With a suspicious display of cunning, the press bureau of the Independent Labor Party, or whoever is responsible for its publicity, has extracted an advertisement from the November, 1917, issue of INDUSTRIAL CANADA, and, without giving the name of the advertiser and only indicating in the vaguest possible way that the matter is advertising,

has proclaimed in large type that the statements made in the advertisement are the statements of INDUSTRIAL CANADA. The bulletin is so craftily worded as to show that its deliberate intention was to deceive and to ascribe to INDUSTRIAL CANADA itself views expressed by one of its advertisers.

The standard of honesty displayed by any organization which resorts to such trickery to achieve its purpose reflects the character of the men behind it. If they can employ such deception in a small matter like this, how can they be expected to act fairly, even with one another, in those larger matters with which they propose to deal?

We merely refer to the matter here so that members of the Association may understand the real connection of INDUSTRIAL CANADA with the deceptive bulletin issued by the Independent Labor Party, a bulletin obviously intended to mislead Canadian labor as to the position of the Canadian Manufacturers' Association on a matter affecting the relations of capital and labor.



The First of a Big Fleet

The "War Mohawk", wooden vessel launched last month at an eastern shipyard. She is a standard design, built to the order of the British Government and is the first of a fleet of 46 similar ships, each having a capacity of 3,000 tons.

Solving Our Reconstruction Problems

An Interpretation of the Programme of the New Canadian Industrial Reconstruction Association, Which Has Been Formed to Ponder the Problems of Reconstruction and Devise Solutions Therefor—Some of These Problems are Social, Some Economic, Some Industrial, and All are National

By JOHN C. KIRKWOOD

CANADIAN business men have organized to define and solve the problems of reconstruction as these affect their own and the nation's interests. The name of their organization is The Canadian Industrial Reconstruction Association, with offices in the Crown Life Building, 59 Yonge St., Toronto. In a circular recently issued the new Association states its objects and enunciates some of the problems of the present and future connected with Canadian industry.

The Association has two main objects:

- (1) To maintain industrial stability.
- (2) To secure wise consideration and prudent treatment of problems of reconstruction.

So stated, these objects are very broad and general. They are more specifically presented in what follows.

Stabilizing Industry

The stability of industry when our soldiers return in great numbers, and when present war activities cease, is almost certain to be disturbed. To reduce this disturbance to the minimum will call for a careful investigation into the condition of various industries, the markets which they supply and must supply, the wages paid to labor as compared with the wages paid in competitive industries elsewhere and the relative charges paid for transportation. This means considerable research work by trained and competent men, and their findings will have place and value in the framing of legislation affecting the interests of industry, capital, and labor.

The Problem of Capital and Labor

The establishment of fair working agreements between workers and employers is one of the big problems connected with the reconstruction period. Already a solution of this problem is being sought, particularly in Great Britain. In other countries, including Canada, the problem has occupied a lesser place in the councils of labor and of capital than it has in Great Britain, where labor is highly organized. In Canada, just because labor is not well organized, the

difficulties of adjustment and of making binding contracts will be great. Yet labor is sufficiently well organized in Canada to have a voice and will, and capital will have to meet labor in a right spirit if troubles are to be averted and eliminated. One is glad to know that Canadian business men are ready to support all movements, whether directed by leaders of labor or by employers of labor, which aim to establish harmonious and just relations.

Women in Industry

The equal rights of citizenship which women have acquired call for recognition, and the Association will recognize this equality and will seek to improve the position of women in industry, and to co-operate as far as opportunity offers with women's organizations in investigating and improving conditions which affect peculiarly the domestic, social and industrial welfare of women. This is a great forward step on the part of organized manufacturing in Canada, and must have notable and far-reaching results.

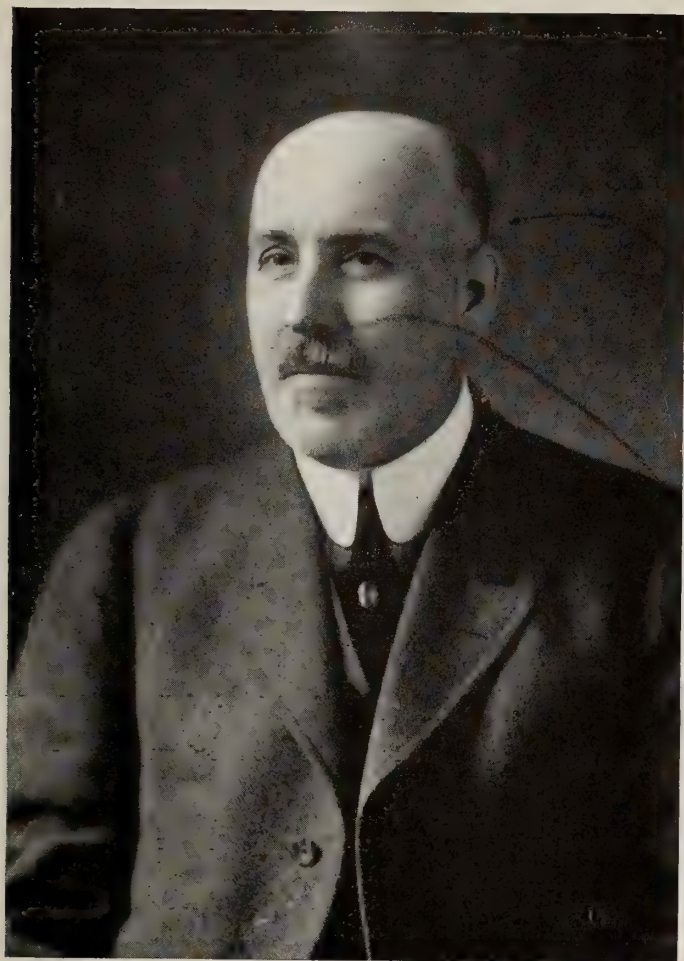
The problem of the employment of women in industry—this when the men from overseas will return—will be acute. Women have entered industrial employments in such large numbers and with such fine spirit, and with such ability, that their displacement will be hard—that is, if displacement be considered. What effect will the participation of women in employments formerly engaged in by men have upon wages? Also, the extension of the franchise to women may have its bearing on legislation related to industry. The feminine factor in the problems of industry in the reconstruction will have to be taken into account with ever-increasing frequency, and it is conceivable that there will be many clashes of wills and opinions before matters at issue can be happily and amicably adjusted. In view of this it is encouraging to learn from the circular issued by the Canadian Industrial Reconstruction Association, representing business interests, that it will seek to improve the position of women in



—B. and C. Press Photo.

Lord Shaughnessy

Hon. President, Canadian Industrial Reconstruction Association



Sir John Willison

Chairman of the Executive Committee, Canadian Industrial Reconstruction Association

industry and to co-operate with women's organizations in investigating and improving the industrial welfare of women.

General and Technical Education

The Association states that it will endeavor to assist in the extension and development of technical and general education. This is as it should be. The whole matter of education, particularly technical or vocational education, is being seriously considered in Great Britain, the United States and Canada. In Canada the matter of technical education is certain to loom large in the near future, because of its great importance in relation to industry. The universities are developing a new sense of their own functions and of the functions of preparatory schools. In Toronto, in particular, there is an articulate movement designed to reform our educational system. In the public press have been appearing articles and editorials dealing with a better educational system for Ontario. The University feels that it is being handicapped in its work by the too easy admission of students to its courses. It is being suggested that all students shall be required to take the honor or senior matriculation examination as the basis of admission to the University. Also, the feeling among the younger men of the University is that the tests of scholarship in the University itself should be made much more severe—this to weed out the incompetent and lazy. The Central Technical School, which is a Toronto institution, should be made a provincial institution, in the opinion of many, including its principal—this so that it can have a greater financial support and give its benefits to a larger number of students. This school is one of the finest of its class in the world, and can be made a far closer ally of industry than it is now.



—B. and C. Press Photo.

John F. Ellis

Who was Chairman of the Provisional Committee at the organization of the Association

Schoolmasters and education departments and officials should view with satisfaction the intention of organized industry to assist in the extension and development of technical and general education. So should economists and statesmen.

Land Settlement and Agriculture

The Canadian Industrial Reconstruction Association includes within the scope of its interest and concern sound projects of land settlement, organizations to extend co-operation among rural producers, and plans to improve rural conditions. It is reassuring to know that Canadian business men are mindful of the rural dweller. In the past they have been charged with being none too friendly in their attitude towards the farmer. It has been thought and declared that the interests of the two classes are in collision: the manufacturer or merchant is regarded as an urban man, with a desire to recruit the labor supply from the farms; also, in the matter of tariffs, the interests of the two classes have not always been parallel.

The war has given agriculture a new dignity, a new wealth, and a new esteem. War has broken down many dividing barriers among all classes. All the people have been drawn together in oneness of purpose and sympathy as never before. The stripping of rural communities of their youth has been seen to have been a national catastrophe. Both the immediate and future needs of our own land and of the world call for unlimited agricultural production, and this implies an abundance of rural labor. So sound projects of land settlement by the returned soldiers have the favor of all right-minded men. From the standpoint of manufacturers, industry will be stabilized if a large proportion of the soldiers, when they return, will go on the land. Thus will the labor market be kept free

from over-supply, and national conditions will be improved in every way.

If the Canadian Industrial Reconstruction Association will work hand in glove with the farmers' organizations, to bring about harmonious relations and to make the conditions of rural life much better than they are now, there will come to Canada a blessing which all must desire. It is gratifying to know that organized industry in Canada seeks improved relations with farmers.

The Vital Matter of Taxation

The Association is outspoken in its views regarding the taxation of capital. It recognizes that all classes must submit to higher taxation, but pleads for enlightened procedure in the devising of new or extra taxation. It protests against the tendency to penalize Capital on the grounds that this is both unjust and uneconomic. The Association says:

"If we lay heavier taxes upon Canadian industries than are imposed upon those of the United States, France, or Great Britain, we impair their ability to supply the domestic market



Major A. N. Worthington

Secretary, Canadian Industrial Reconstruction Association

or to secure a foothold in other markets during the period of reconstruction. Our industries will be helpless when peace is restored if they have no adequate reserve of working capital. Unless there is a demand for labor when the war is over it will be difficult or impossible to provide employment for returned soldiers and the thousands of other workers released from munition factories and other concerns engaged in the production of war supplies."

The Association is not pleading for an escape from fair and equitable taxation, but that industry shall not be loaded with a tax burden that it ought not to carry. It argues that capital shall be allowed the freedom it requires if it is to perform its highest social, national and economic service. Doubtless the Association is alarmed at the tendency of our legislators to impose on capital and industry taxes and restrictions which in the last analysis must defeat or cripple national and industrial prosperity.

Safeguarding Canada's Foreign Trade

In the days following peace, when foreign markets will be desired, and when the opportunities for foreign trade will be tremendous, it is absolutely essential that Canada, for her own

sake, shall be in the most favorable position to manufacture at the lowest possible cost. Whatever may be the advantages of Canadian manufacturers in their home market, they will have no corresponding advantages or situation when they enter world markets. There and then orders will go to those who can fill them at the lowest cost to the customer. Canada will be in competition with Great Britain, France, the United States, Italy, and probably Germany. But if Canada has to go to the world markets with her goods made artificially high in price—this by excessive domestic taxation—it is clear that such taxation will be nothing short of suicidal.

Speaking of the relation between manufacturing and taxation, the Association says:

"The war may, and possibly should, bring new forms of taxation, but customs duties must continue to be the chief source of revenue. It is doubtful if all the new forms of taxation that can be devised will meet the interest upon the war debt alone, to say nothing of pensions and other heavy war obligations. Duties necessary to provide revenue will afford such incidental protection as should enable us to create and maintain new industries, and take full advantage of all that we have learned during the war of processes of manufacture, stores of raw materials, and requirements of overseas markets. Much that we imported before the war we will manufacture in the future if we afford reasonable security in home markets and utilize our greater knowledge of the resources of Canada for the advantage of Canada."

In this one gets a hint of what is in the Association's mind as to the better way of raising money: namely, the taxing of imports. The inference is that the Association favors a protective tariff, not only as a means of safeguarding Canadian producers against the competition of foreign firms, but as an expedient for relieving themselves and others of burdensome and unwelcome direct taxation.

But there is another reason why Canadian exporting firms should be able to trade advantageously in foreign markets: it is that Canada must pay her debts to other countries as much as possible in the form of trade balances. If anything—taxes or lack of enterprise or any other thing—should lead to Canada's eclipse, partial or complete, in foreign markets, then domestic prosperity will be impaired, and we shall be driven to raise revenue for domestic needs by increased domestic taxation. So there is excellent reason why our Canadian manufacturers should be put in the best possible position to manufacture at the lowest possible cost. The gain will not only be to them, but to all the people.

Trade Within the Empire

When the war is over, and the seas are free once more, without menace, and when ships of commerce will go from port to port with full cargoes, it seems reasonably certain that the British colonies, and perhaps the allies as a whole, shall be bound together in some form of trade federation. At any rate, there will be a very natural and proper desire on the part of all the component states of the British Empire to trade one with the other to the fullest possible extent. Whether or not there will be granted reciprocal preferential customs tariffs, there will be a trade intercourse which will be as unhampered as possible. The matter of raw materials, the lowest possible transportation rates, common patent laws, and the cultivation of friendly trade relations will be matters on which all the countries of the Empire will desire to be in accord. The aim will be to make the Empire independent of other countries in respect of food supplies, raw materials and essential industries. At the same time, legitimate self-interest will lead Canada to seek to build herself up industrially to the fullest possible extent. On this point the Association says:

"It must be remembered that we cannot derive the greatest national advantages from our natural resources unless we complete the processes of manufacture in Canada. If we ship our raw materials out of the country to be manufactured elsewhere, not only do we build up foreign industries, but in many

cases the finished articles will be returned to the Dominion to compete with the products of Canadian factories. By manufacturing in Canada we create local industrial communities, provide employment for labor, trade for merchants, and home markets for producers."

Prior to the war we have not, as a people, been properly appreciative of the value to us of our raw materials, and have frequently allowed outsiders to get possession and control of them, and permitted them to be shipped out of the country in their raw state. It can be read into the Association's statement of policy that legislation will be invoked to control and regulate the export of raw materials. At any rate, we have a new sense of the idea of conservation and of the value of our raw materials and of the trading advantages they give us. Never again are we likely to be careless in regard to them.

Immigration After the War

That in the days of reconstruction there will be a heavy inflow of settlers from the allied countries into Canada would seem to be the belief and expectation of the Association. It is recognized that not all those who may thus come will go on the land; many will settle in industrial centres. Many of those who will come to Canada will be discharged soldiers, and with these may be reckoned our returning Canadian soldiers. On this point the Association says that at any cost we must ensure that no returning Canadian soldier shall look in vain for work at decent wages. Here, again, the thought is to stabilize industry as well as to provide right and well-paid employment for those who have fought for us.

Community Development

The Association has broad and enlightened views concerning the development of local communities. It recognizes the close interdependence of urban and rural communities, and desires that neither shall prosper at the expense of the other. As previously stated, the Association will co-operate with rural producers and with organizations of farmers to promote improved rural conditions. It will aim to create prosperous local industrial communities by the promotion of domestic manufacturing. It will give earnest attention to the development of the natural resources of Canada for the common good.

Will Study Progress in Other Countries

The Association approaches its problems and the matter of their solving in no narrow or parochial spirit. It recognizes that we are part of the wide, wide world in all that we do and plan. To this end it proposes to investigate what is being done in other countries—not for slavish imitation, but for inspiration and guidance. All the countries of the world will have reconstruction problems, and the best minds and the ripest experience will be employed to re-establish society and industry on right foundations. It is desirable, therefore, that what may be done or considered in other countries shall be made known to Canadians. The Association will endeavor to supply facts and statistics affecting agriculture, manufactures, labor, transportation, and markets in the confidence that if the people are informed, our parliaments will be strengthened to resist doubtful proposals, and enabled more easily to maintain the national interest against any class or sectional interest.

An Altruistic Organization

It is not denied that the inception of the Canadian Industrial Reconstruction Association has had its origin in selfish objectives. In a sense it is a defensive or protective association, organized to safeguard industry from possible inimical and baneful legislation. At the same time the men

who compose the Association are citizens as well as manufacturers, men of eminence and distinction in their own communities and in larger ones, on whom the country relies for the conduct of big industrial enterprises, and are true Canadians. They are men with statesmen's minds, able to see beyond the ends of their own noses and the confines of their own businesses. They are patriots with a sincere desire to see Canada built up in all good and true ways. They are ready to give of their time, money and service that Canada may be exalted and her destiny glorious. The names of the Executive Committee of the Association are:

Rt. Hon. Baron Shaughnessy, Hon. Pres.; Hon. Nathaniel Curry, Senator; Huntley R. Drummond; George E. Drummond; J. H. Sherrard; John F. Ellis; W. K. George; W. K. McNaught, C.M.G.; S. R. Parsons; T. A. Russell; Sir John Willison; William Stone; H. D. Scully; R. Hobson; Lieut.-Col. Harry Cockshutt; E. W. Beatty; Howard G. Kelley; Wm. McMaster; W. M. Birks; Wm. Rutherford; W. A. Black; Carl Riordan; Norman Dawes; F. W. Molson; J. W. McConnell;



—Photo. by Minna Keene.

Miss Marjory MacMurchy

Head of the Women's Department, Canadian Industrial Reconstruction Association

Paul T. Myler; Hon. Col. F. Nicholls; W. M. Gartshore; R. O. McCulloch; W. J. Bulman; E. A. Mott.

The quality and records of these men are at once a pledge and guarantee that the Association has honorable objectives and that these will be achieved in an efficient and worthy way.

In the matter of its organization the Canadian Industrial Reconstruction Association will have three sections, an Eastern District Committee, a Central District Committee, and a Western District Committee. These three sections of the Association will have branch headquarters at Montreal, Toronto, and Winnipeg, respectively. The Secretary of the Association is Major A. N. Worthington.

The Association has three watchwords—Unity, Stability, Prosperity. We shall need in the days of reconstruction unity, stability and prosperity, and it is comforting to know that our country possesses now—in these days of looking forward and planning—a strong organization of business men of the highest calibre and character to deal with the things that belong to the reconstruction period.

Canada Must Prepare for Reconstruction*

The Dominion Will Neglect All the Lessons of the War if We Do Not Conserve Our Own Raw Materials and Make Our Natural Resources the Basis of Canadian Industrial Communities Employing Labor, Providing Trade for Merchants and Creating Local Markets for Producers

By SIR JOHN WILLISON

Chairman of Executive Committee, Canadian Industrial Reconstruction Association

IT is curious that some newspapers warn us not to think now of peace or to prepare for reconstruction. They say that our only immediate concern is the war, and that it is unwise, if not unpatriotic, to consider after-war problems until peace is restored. One thinks of the long years in which constant appeals were made to the British Empire not to prepare for war and the confident assurances that Germany was pacific and a good friend of the British Empire. We have paid the price for neglecting war preparation. Let us be careful that we do not pay too heavily for neglecting the problems of reconstruction.

According to Mr. Gerard, who was American ambassador at Berlin during the first years of the war, already many ships are building in German shipyards for trans-Atlantic trade when peace comes. We have recent evidence, too, that Germany is accumulating stores of raw material in neutral countries. The hope of Germany is that the war will not invade her territory, and that the shipping of Great Britain, the United States, Canada and other countries will be greatly impaired through losses by submarines and other causes, and that if she is vigilant and active she may quickly recover her lost trade in other markets. Of course, much will depend on the conditions of peace and whether or not Germany can get access to raw material from other countries. Thus it is important that the voice of Canada should be heard in the peace settlement, and that the terms should not be such as to give Germany an advantage during the years immediately succeeding the suspension of hostilities.

Returned Soldiers and Immigrants

When peace comes, two or three hundred thousand men will cease to manufacture munitions in Canada. Between three and four hundred thousand men will come back from the war for whom employment will have to be provided. No doubt there will also be an increase of immigration. It is of vital importance, therefore, that our industrial system should not be disturbed, and of equal importance that our farmers should have the best access to foreign markets in addition to good home markets. Moreover, if we are to be secured against a period of unemployment and commercial depression, we must take measures to increase exports of manufactures so that our industries may turn to other activities when war orders cease, may hold markets on this continent and assist in the restoration of Europe.

The other day Hon. Rodolphe Lemieux made certain references in the House of Commons to the Industrial Reconstruction Association. He pledged himself to support the Grain Growers if their representatives in Parliament would submit a tariff resolution embodying their demands for lower duties. He said, "If the representatives of the Western farmers are under an agreement not to discuss the tariff, not to change the tariff, the protectionists disclaim any such ar-

rangement. They are not idle. They keep busy. The men who defeated reciprocity by the flag-flapping process are today entrenching themselves in their privileges. They are more active than ever." Mr. Lemieux went on to say that these "hide-bound protectionists were engineering their pet scheme of higher tariff walls for after-war conditions." He declared that they were against any higher taxation of profits. They said in effect, "You should raise the customs duty in order to protect a little more our interests which are already so well protected." The statement by Mr. Gerard, warning the American people against the far-reaching plans of Germany for domination in world markets, he gives as an original statement of the Industrial Reconstruction Association, and not as it should be, and as it is in the manifesto of the Association, a quotation from Mr. Gerard. Mr. Lemieux added: "We are at war. Our boys are fighting at the front. Our people are being bled white, but the protectionists of Toronto are busy. They are not idle, as are the farmers' representatives in this House; they are under no agreement; they are entrenching themselves."

Misrepresenting the Association

In these statements Mr. Lemieux, consciously or unconsciously, greatly misrepresents the Industrial Reconstruction Association, as I believe he misrepresents the great body of Canadian manufacturers. There is no organized movement among manufacturers to increase duties. There is no demand for higher protection. The increase of duties in order to provide war revenue was not sought by manufacturers, nor, so far as I can learn, was it desired by the industries of the country. They have, however, been held responsible for a measure which they did not suggest and as to which they were not consulted, as they are charged with now planning to secure additional protection.

If Mr. Lemieux means to advocate free trade, one cannot think that he speaks for his own province. It is certain that Quebec sets great value upon the prosperous industries which employ so many thousands of people within its boundaries, and unquestionably a multitude of these people would be driven across the border to join so many of their compatriots who have already found homes in New England if such a policy as Mr. Lemieux seems to favor were carried into effect. Compulsion for military service will take many young men out of Quebec, as it will draw heavily upon the young men of other provinces. One ventures to think, however, that the fiscal policy which Mr. Lemieux professes to favor would send far more young men out of the province than will be taken for service in France and Flanders, however splendidly Quebec may respond to the call for service and sacrifice.

The manufacturers of Canada recognize that when peace comes they will have a great responsibility to provide employment for the home-coming soldiers at good wages and under decent living conditions. They know that if they are to do this they must be strong to meet whatever conditions

*Speech delivered at annual dinner of Toronto Branch, Canadian Manufacturers Association, May 16, 1918.

may arise. It is not true that they have opposed taxation of industries nor have they opposed taxes on income. They have borne as cheerfully all the burdens of war as any other element of the population. They have not shown less public spirit or less readiness to sacrifice. Surely they are not the only people who may not consider problems of reconstruction, or concern themselves with the industrial conditions by which they will be peculiarly affected and for which they will be held greatly responsible when peace returns.

Relations of Labor and Capital

It is important also that sympathetic relations should be established between capital and labor. Few now dispute the right of labor to organize, and more and more, by conference, committees and by other methods, employers are consulting their workmen and recognizing that efficient and well-paid labor is the cheapest labor in the end. In the past some employers have been unreasonable, and some labor unions just as unreasonable. It should be possible, however, by closer association and consultation, to avoid many causes of friction and misunderstanding and ensure in every industry in Canada the best wages and the greatest possible output at the lowest possible cost of production.

Mr. Lemieux seems anxious to make a quarrel between newer and older Canada. I do not believe that there is any necessary conflict between East and West, just as I do not believe that the East only is concerned in the prosperity and expansion of Canadian industries. No one can foretell exactly what will be the relations between the allied nations when the war is over. It does seem to be clear that Great Britain will not adhere to rigid free trade. The Balfour Committee, of which a free trader is chairman, and which has many free traders among its members, suggests Imperial preferences and advocates priority of raw materials for the Empire and a dumping clause for the United Kingdom such as we have had in Canada. In these measures there will be a flavor of protection by whatever name they may be called, and it is curious to suggest that the lesson which Great Britain is learning from Germany and other protectionist countries, we, at this time of crisis, should unlearn in Canada.

Britain's Agricultural Policy

The West will have a vital interest in the future agricultural policy of Great Britain. In a recent statement, Mr. Prothero, president of the British Board of Agriculture, said: "During 1917 we not only saved 30,000 acres that threatened in that year to be lost to cultivation, but we increased the area of our ploughed land by a quarter of a million acres. During 1918 we shall add to that a million other acres. Briefly speaking, the aim of the Board of Agriculture for the present is to redeem all of the three million acres lost, and to make sure that a maximum of 27,000,000 acres that we have, totally, is sown with crops of the greatest benefit in the existing crisis of the country as a whole." Mr. Prothero added, "From the struggle we have necessarily taken many severe lessons. Not the least of these has been that we must make ourselves at least capable of self-feeding; not to be self-feeding, but to be capable of self-feeding." He continues, "It is idle to pretend that we shall return to anything even approaching pre-war agricultural conditions. A new order has been set up in England; a new doctrine already invested with the authority of the law printed upon it." In his further argument, he contends that in order to be capable of self-feeding, between 13,000,000 and 14,000,000 acres of land must always be under cultivation, and the Government, as a permanent measure of safety, must see to it that at least half the Kingdom's farm land is annually ploughed.

If in the future we are to find a less capacious market for the food products of Canada in Great Britain, it will be more necessary to stimulate home markets and increase the domestic demand which arises by growth of villages, towns and cities and increase of urban as well as of rural population. As I have said, I do not believe that there is any necessary conflict between East and West. If a group of manufacturers and a group of Western farmers could meet around a common table and ignore political catchwords and political programmes, they would substantially agree upon a fiscal policy as acceptable to newer as to older Canada. Indeed, I believe that if for six months the officers of the Western Grain Growers' Association could be responsible for the affairs of the Canadian Manufacturers' Association, and the officers of the Canadian Manufacturers' Association control for a like period the affairs of the Western Grain Growers' Association, we would have an end of the tariff quarrel in Canada. We would discover that manufacturers are not less unselfish than farmers. We would find that both classes are able, in order to secure unity, stability and prosperity in the country, to subordinate class interests to national considerations. And the tariff issue, exalted and exaggerated for class, sectional and party reasons, would be reduced to its true proportions.

Canada Must Conserve

We will neglect all the lessons of the war if we do not conserve our own raw materials and make our natural resources the basis of Canadian industrial communities, employing labor, providing trade for merchants, and creating local markets for producers. Of course, all practicable measures should be taken to settle soldiers on the land if it is their choice to go upon the land. But compulsion would be unthinkable and impracticable. The country that will produce the most will best meet its burden of war taxation. In no other country is there greater room for increased production than in Canada. Hence, agriculture must receive as much consideration as industry. In other words, national policy must be determined, not with a view to the interests of any class, but with a common regard for all classes and all sections of the country.

British Columbia Branch

New Officers Were Elected at Annual Meeting Held in Vancouver on May 15

At the annual meeting of the British Columbia Branch of the Canadian Manufacturers Association, held in Vancouver on May 15th, William McNeill, Western Canada Power Co., Limited, was elected to the chairmanship, succeeding E. W. Hamber, British Columbia Mills Timber and Trading Co. The vice-chairmanship went to Edwin Tomlin, Associated Cement Co. of Canada, Limited. The following were elected members of the Executive Committee:

E. W. Hamber, B.C. Mills Timber and Trading Co.
G. W. Wooster, Granby Consolidated M. S. and P. Co.
W. H. Leckie, J. Leckie and Co., Limited.
J. J. Plommer, Clayburn Co., Limited.
J. H. McDonald, B.C. Manufacturing Co., Limited.
J. W. F. Johnston, B.C. Sugar Refining Co., Limited.
W. J. Wilson, P. Burns and Co., Limited.
F. Moore, Canadian Explosives, Limited.
H. J. Biggar, American Can Co., Limited.
F. Millerd, Gorse Millerd Packing Co., Limited.
J. J. Warren, Consolidated Mining and Smelting Co.
John R. Duncan, Vulcan Iron Works, Limited.

The appointment of two members to represent the branch on the General Executive Committee was referred to the incoming executive.

Our Duty With Respect to Research Work*

This is No Time to Dally With the Question but a Time to Study it Out for Ourselves and
Decide on Some Plan Which Will be a Credit to Our Intelligence and a Tribute
to the Men Who Have Been Fighting the Battle for Liberty

By THOMAS RODEN

Past Chairman, Toronto Branch, C.M.A.

WHAT is the duty of the Canadian manufacturers with respect to Industrial Research? It is easy to ask questions. It is sometimes easy to answer them, but to answer them in such a way as to awaken interest in our responsibilities is the problem. There is no doubt that in the light of present conditions, which are the outcome of the war, the reconstruction period is the one period which looms large in the public mind. The new mental attitude toward social and business relations has to be reckoned with. The possible treaty relations between allies as against enemy powers is an element that may play an important part in the future of our country. There will be an endeavor by all nations who have been at war and who have incurred great liabilities, to discharge those liabilities by the selling of goods. The assurance that all the nations will be striving to equip themselves with the most up-to-date methods of production, to utilize to the fullest the awakened knowledge and proved value of science in co-operation with industry should awaken us to estimate more carefully the value of specialization in industry. The younger and perhaps the smaller nations will strive most and get results more quickly than the older nations. Having this apparent condition before us, we should without delay, without misapprehension, commence to lay the foundations of a policy to meet this situation. We should see in what way we can discover, co-ordinate and utilize the brains of the country for the general good. This duty should not be for Toronto, for Ontario, but for Canada.

A Force in Embryo

The Government in 1916 instituted the Advisory Council of Scientific and Industrial Research. That Council has been preparing its work; getting statistics of our resources in men and materials. It is time we get together to utilize these forces and resources. We should show keenness, desire and anxiety to use them, such as we would if we were embarking on a new industry or studying the use of new machinery. To almost all in Canada this is the new force in embryo as regards application to industry. We have read of it or experimented with it, and in some cases are testing it, but only in the experimental stage. In our endeavor we have either limited its activities for fear of the betrayal of trade secrets to our competitors, or have decided after careful review that the changes would be too expensive. Or we have felt we might relieve ourselves of all responsibility and expense by copying what the other man has done. Has it ever occurred to you that Canadian industry in most cases occupies the position of looking over the other boy's shoulder and copying from his slate—easy, very easy, but no boy ever got very far on this plan. No, our men have shown at the front that they could do things, and have proudly led the way in courage and resourcefulness.

We must do the same, we must use all the knowledge and experience the other man has obtained and hitch up our forces of courage and resourcefulness so that we can as

proudly hold our place in the front line in industry. We must with energy and determination co-operate in Industrial Research. Agricultural Research, guided by Prof. Zavitz, increased the value of the oat crop in Canada three millions per year in the second year. It is estimated the result of research work applied to the incandescent light is saving the United States two hundred and twenty-five million dollars per year. England is spending over five million dollars, Japan upwards of two million dollars, France giving very special attention, Germany (so newspapers tell us) spending more than ever in the control and direction of her industries.

I will quote from a translation prepared by Sir Robert Hadfield:

"At a meeting of the Kaiser Wilhelm Trust for Promotion of War Science, April 19, 1917, it was stated that the management committee of the German Union of Technical and Scientific Societies had decided to create an intermediary agency between the technical world and scientific societies for the carrying out of scientific and technical research work so that industry not equipped for experimental work, especially smaller concerns, might be afforded an opportunity of having problems solved through aid of the union."

It suggested as a medium:

(1) That the great intellectual and material resources of scientific institutions, of university and technical academies, and knowledge and experience of their heads, might be rendered serviceable to German industry more than hitherto.

(2) Industry, where not equipped for carrying out the task by means of its own arrangements and staff (particularly smaller concerns less equipped for experimental research), will be afforded opportunity of having questions otherwise left unsolved conducted into proper channels for solution through aid of union.

Some of its objects were:

(a) Procuring raw materials formerly obtained from abroad. Manganese production, increasing iron production, sulphur production, agricultural intensification.

(b) Increasing use of waste products, such as obtaining lubricants from coal-tar, supply of enough clothing by using waste material.

(c) Producing substitutes. Nitrogen from air, substances by synthetic processes where natural way not available, such as cattle food from straw.

Prof. Fischer says, "I cannot imagine any substance for which a substitute could not be found." This is the German mind.

Further in the middle of the war, the German iron and steel industry has laid the foundation of a significant peace work. At a meeting of leading men of the industry from all parts of the Empire, which took place at Dusseldorf on the 19th June, 1917, the foundation of a building for research was discussed. The meeting was convened by the German Iron and Steel Institute, the President of which, General Director A. Vogler, Dortmund, gave an introductory address.

The business manager of the Institute, Dr. Engineer O. Peterse, gave a detailed account of what has already been done in the way of scientific research for the iron and steel industry in various countries. He showed the necessity

which will increasingly be necessary for technical research in all directions in order to arm for the business struggle which will follow the war. He could only deal shortly with the great and important tasks which will fall on a research institute, especially as a detailed memoir will shortly be published on the subject. The speaker called attention, however, to this—that the one aim of such a Technical Research Institute should be to attain success in every task coming before it. How such an establishment is founded, built and maintained, was the subject of the speaker's further discussion, who unfolded to the meeting in outline a picture of the Research Building and the requirements for its profitable working.

Canada is doing and will only do what her people ask for. This is no time to dally with this question; no time for looking over the other chap's shoulder, but the time to study for ourselves. We are always behind if we wait for the other man's lead. We know the way to success is by personal effort. Our Government wants your co-operation and advice—what are you prepared to give? Not as individuals, but as group trades where the nation's money can be spent for the common good, for the greater security of our industries, for the greater benefit of the industrial class. It is the successful firm which can pay the best wages and give the best conditions. We want, as in England, the co-operation of every class in industry to consolidate its resources, to improve its output, to aim for efficiency and productiveness.

Arthur Henderson, M.P., is proposing a programme for England's reconstruction period. I will quote from the report, taken from the *Toronto Globe*, May 9th, 1918:

"Arthur Henderson, leader of the Labor Party, has issued a circular containing resolutions on the reconstruction to be proposed by the Executive Committee at a party conference to be held at Westminster on June 26th.

"The resolutions, numbering twenty-seven, deal with social reconstruction, the need for increased production, the maintenance and protection of the standard of life, provision for soldiers and sailors, discharge of civilian war workers, restoration of trade union conditions, the prevention of unemployment, complete emancipation of women, restoration of personal liberty, political reforms, Ireland, constitutional devolution, housing and education, temperance reform, a Ministry of Health, State control of railways, mines and agriculture, and national finance.

"With regard to production, the resolution recognizes the need for the application of more science and intelligence to every branch of the nation's work, and the marshalling of the nation's resources to meet the need in the order of their national importance."

Let us get together, size up the Canadian situation—no one but ourselves should know it better—and decide on some plan which will be a credit to our intelligence and a tribute to the men who have been fighting the battle for liberty.

Japan's Trade

Both Exports and Imports Showed Substantial Increases Up to the Middle of February

The total value of Japan's exports from the beginning of the year to the middle of February is estimated at 192,783,000 yen, while that of imports is placed at 200,499,000 yen (1 yen is equal to approximately \$.50). Both of these figures are substantial increases over the figures for the corresponding period of last year, but the imports have so increased that the balance of trade thus far is in their favor.

The principal exports in the order of their importance are cotton cloth, raw silk, cotton yarns, coal, habutai, copper and matches. The principal imports listed according to their value are raw cotton, steel bars and plates, oil cakes, machinery, wool and iron ingots.

New Coast Service

Nova Scotia Steamships, Limited, Will Conduct Service on Atlantic Coast, Between New York, Halifax and St. John's

The Federal line and associated interests announced, on May 20, the inauguration of a regular weekly service, both freight and passenger, between New York, Halifax, N.S., and St. John's, Newfoundland.

Arrangements have been made under which the new line will act in co-operation with the Canadian Government for the shipment to the United States of many Canadian commodities for which in recent months, owing to war conditions, only irregular facilities have been available.

The new line will be known as the Nova Scotia Steamships, Limited, and will be operated by the Federal Line, Inc., as owners' agents. Frank C. Chipman, formerly general manager of the Plant Line steamers, operating from Boston to Halifax, will have personal charge of the new service.

Motion Picture Exhibition

British Industries Organizing to Show Manufacture of British-Made Goods Throughout the World

The Motion Picture Exhibition of British Industries is organizing a tour of the important cities of Western Europe, North and South America, and the British dominions. Films will be shown illustrating the manufacture and use of British-made goods. The exhibitions will be given under the auspices of British chambers of commerce in Allied countries and the self-governing Dominions. In eighty-five of the principal cities of the world films are to be exhibited illustrating leading British industries and manufactures, and to these exhibitions representatives of the principal firms in the cities visited will be invited. A British manufacturer may have films of his industry prepared by the company, and these will be exhibited in such places included in the tour as he may select.

High-Strength Steel

Colonel Leonard Shows How Sudbury Nickel-Copper Ores Can be Used in Combination With Iron

In a paper recently read before the Canadian Society of Civil Engineers, Lieut.-Col. R. W. Leonard explained the utilization of Sudbury ores to produce steel of high strength. In these ores there is a large content of copper and nickel in combination with the iron. The new steel was found to give results under test that were fully equal to those of nickel steel. It showed an ultimate strength of 70,000 to more than 100,000 pounds per square inch, with a yield point of 60,000 to 80,000 pounds per square inch, and showed properties which would make it a very satisfactory material for use in the manufacture of ordnance and bridges. New material is not yet on the market, but its cost should be very low. Direct use of nickel-bearing iron ores is not new, but heretofore instead of trying to use nickel-copper iron ores direct in the smelter, efforts have been made to get rid of the copper. The Canadian experiments, however, show that a very satisfactory result can be obtained by a special treatment of the ores without making any effort to eliminate the copper content.

Industrial Warfare

To Fight Against the Waste of Material and Labor is to Combine Patriotism and Profit

The Second of a Series of Profit-Building Plans

By ROBERT ARKELL

Of Thorne, Mulholland, Howson & McPherson, Industrial Advisors, Toronto

THE aims and powers of the War Trade Board made interesting reading for the manufacturers, but few, if any, felt that it affected them in any way. Did they not always fight against any increase in staff? Would they even think of allowing a workman to use more material than was necessary? Quite true, but the answer is: that you do not have to increase the number of your employees to waste labor; and it all depends on what control (not supervision) you have over your material, whether you are manufacturing economically.

Nine out of ten manufacturers are guilty of waste. Five of the nine do not realize it because they lack the analytical ability to convince themselves—they look at waste every hour without recognizing it as such. Three more of the nine will grudgingly admit their inefficiency but have long resigned themselves to the loss because they do not know of any way of overcoming it. The remainder of the nine—which is but one—sees the weak points and is struggling to strengthen them, but is handicapped

by an indefinite plan of action. For the majority, then, the first step is to investigate, for unless you are convinced that your methods are unprofitable you have no foundation on which to build a better paying business—and there is no better place to start than on the payroll. Acquaint yourself with the routine duties of every employee in your factory. Satisfy yourself that each has a necessary occupation. You will be surprised at the number who are simply described as “handy men” and “utility girls”—loose ends that have no place in a proper organization. Chat with some of the better class of employees—girls as well as men. Draw out their opinions of the plant in general. They are sure to have a number of valuable suggestions. Ascertain their attitude toward their foreman. Do they re-

spect him, fear him, hate him? A tactless or vulgar foreman will unconsciously keep your production down to half of what it should be because the average employee is bound to “get even.” And even if he is caught and discharged, the new man will do the same thing just as soon as he suspects that he is not receiving proper treatment. On the other hand, if the foreman is lax in his dealings with the men your production

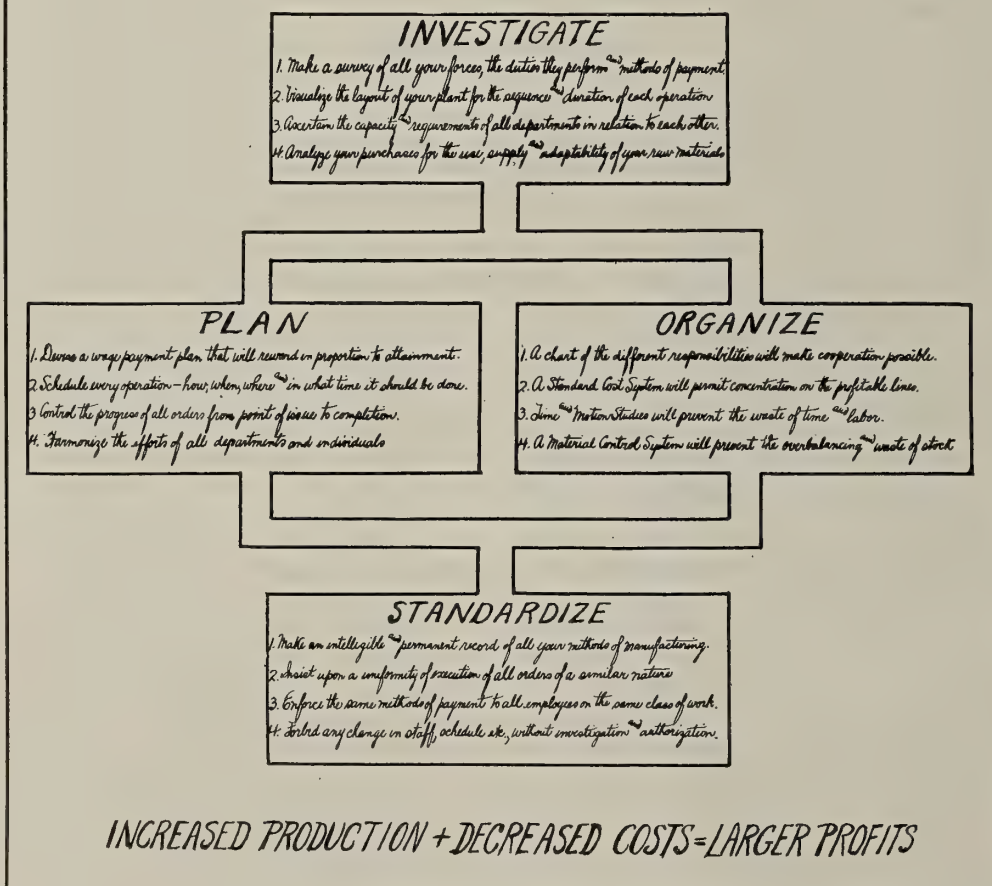
will also suffer. “Easy marks” and “slave drivers” both make expensive foremen. They should be leaders in every sense of the word.

Then look over the rank and file. How many do you employ? If it is over 300 you should have an employment agent. But if it is only 50 there should be but one executive who has the power to hire and fire. Centralize the authority for your labor turnover. Over half of your employees are discharged thoughtlessly or through misunderstandings. The lowest cost of replacing each is at least \$10—the highest will run up to \$200, depending on your product and the duties performed, but the average is gener-

ally around \$25. Where foremen engage and discharge their own help there is bound to be more changes than are necessary. It is an important leak, especially at the present time, and can easily be stopped by proper handling. The secret lies in the careful selection of the new employees. More than an ability to do certain work is required of an applicant. Does he look as if he would be hard to handle? Does he appear to be healthy, industrious and ambitious? Has he the earmarks of a trouble breeder? Satisfy yourself from every angle that he is the proper man.

How many employees left to better themselves? How many were on time work? How did you arrive at the time workers' wages—by comparison? That is the usual method. You pay Jones \$20 per week because Smith gets \$18 and

FOUR SECTIONS TO EACH OF THE FOUR DIVISIONS = SIXTEEN ROADS TO BIGGER AND BETTER BUSINESS



Brown draws \$22. It is supposed that Jones is better than Smith and not quite as good as Brown, but that does not prove the equity of your method. Why do the other two draw more and less? What is the base for all these calculations? It cannot be the labor market, or your employees could make as much with you as anyone else, and they would not leave you to obtain more money. Nor can it be on a productive basis, because you have no direct check on each time worker's output. Of course, the majority of manufacturers will argue that they have a "pretty good idea" of each employee's productiveness, but what would happen if you applied this principle to every branch of your business—for instance, your orders or customers' accounts, etc.

Some Pertinent Questions

How many employees have you on piece work? How were their rates determined? Did you pick out the most conscientious time workers on each operation and divide their wages by their output? Or did you fix a fair wage based on what the foremen could do? If so, a cut in the rates was inevitable; and a reduction has the opposite effect of that desired: it causes restricted production, breeds ill-will and increases the labor turnover. On the other hand, if the rates are based on what your fastest workmen can do, the rates will be too low for the majority and they will not try to make a success of the plan. New men or higher rates are your only solutions, but either step is very unwise. To "give ground" or to insist that you are right when you are wrong is the thin edge of the wedge for future labor troubles. Base your rates on time and motion studies by a competent man. In this way the slow workers will be shown how to greatly increase their production without additional effort, and the fast workers will have pointed out to them many short cuts they never thought of. Every man will be on an equal footing as far as methods go. The resulting piece rates will be lower than is otherwise possible. The rates can be guaranteed because they are based on facts instead of estimates and the men will then not hold back in fear of a cut.

With the layout of your plant a different problem arises. Here we face a waste of overhead—a loss of time—caused first: by indirect routing of the order, owing to a poor arrangement of machinery or work tables; or, second: by congestion of work at different points en route, owing to an improper balancing of equipment, indefinite schedules or friction between the different department heads. Draw a rough plan of each department, marking the approximate position of each machine or bench, and draw a continuous line through all the points at which an average order actually stops. Are there any "knots" in the line? Then your order is doubling back on its tracks which shows the need and how to obtain a better layout. Your building may not be a suitable shape for "straight line" routing, but a little thought will vastly improve your present layout. The slight cost of the change is nothing compared with the returns.

Avoid Congestion

You could also use the rough plan of each department to mark the favorite spots for congestion. Ascertain how many orders are ahead of each machine—how long it has been there and why. The foreman may tell you "it can't be helped," and he will offer several apparently plausible reasons, but if you trace the trouble to its source you will come to an entirely different conclusion. Do you send your orders to the factory as fast as they come in and keep asking the factory how they are getting along? Do some departments rush their work and push it along to the next, regardless of whether it can be handled advantageously? Are not some of your departments

behind oftener than usual? Is it the fault of the "boss," foremen, men or equipment? Proceed slowly, carefully—diagnose your case correctly—otherwise you cannot prescribe an effective remedy. What is the actual capacity of each machine and of the department as a whole? How does the possible output of the different departments compare with each other? Are you only using 75 per cent. of some departments' capacity because others have all they can do to keep up with the present demand? Figure out what this waste of 25 per cent. is costing you and see if it will not pay you to secure additional equipment. Increased production means decreased overhead—lower costs—larger sales—more profit!

Now analyze your purchases. How many different kinds of material did you buy? What is each one used for? Could any of them serve a dual or even a triple purpose and thus cut down the variety and value of the stock required? There are many things which we were sure were essential in 1913 which have now been almost forgotten. Can you prove that all your purchases are absolutely necessary? What quantity of each line do you use in a year? How much have you on hand now? Have you made yourself dependent on certain firms for certain lines? When the supply is scarce you should split your orders. Keep in the good grace of three supply houses for each line and you will always have another friend to turn to if one should fail. Do you buy with an eye to first cost alone, or do you study the material's adaptability to your machines? More than one manufacturer is losing more in his factory than he saves in his purchasing department. What was your consumption of the different raw materials? What quantity of finished product did you obtain? The difference represents your shrinkage. By how much does it exceed your estimates? Start to-day controlling your materials. Your experience will tell you the requirements of each order. See that no more is issued and it cannot be used.

In the next issue a definite plan of action will be outlined to enable you to stop the leaks you have found.

Japan's Chemical Industry

New Companies Being Organized in Large Numbers Each Year for Production of Chemical Products

Of all the industries in Japan that have developed since the war began the chemical industry is assuredly the leader, says the *Hochi*, a Japanese vernacular paper. Commenting on the development of this industry the editor says, "According to an investigation of the Department of Agriculture and Commerce the number of new chemical companies established in 1913 was 143 and the amount of capital invested was 3,000,000 yen (\$1,500,000). In 1914, 87 new companies were organized with a capital of 600,000 yen. In 1915, 63 new companies, with a capital of 2,970,000 yen, were organized. In 1916, 220 companies, with a capital of 14,000,000 yen, and in 1917, 282 new companies, with a capital of 24,000,000 yen, were organized.

"The actual condition of the industry in Japan, however, is not as encouraging as is suggested by these figures. The backbone of the chemical industry, as we all know, is soda, and the production of this commodity is not at all developed in Japan. It is true that there are one or two manufacturing plants in the industry, but they are still in the experimental stage. The chief drawback to the chemical development is the high price of its essential material. The price of salt in Japan is several times higher than the price in England, Germany or America. This being the case, the industry cannot possibly develop unless protected by a very high import duty. We cannot yet be optimistic about its future."

Conservation of Fuel in Boiler Rooms

This is the Second and Concluding Portion of an Article Which Appeared in the May Issue and in it the Author, an Experienced Engineer, Gives Further Valuable Advice as to Steps Which May be Taken to Improve the Efficiency of Plants

By W. A. SWEET

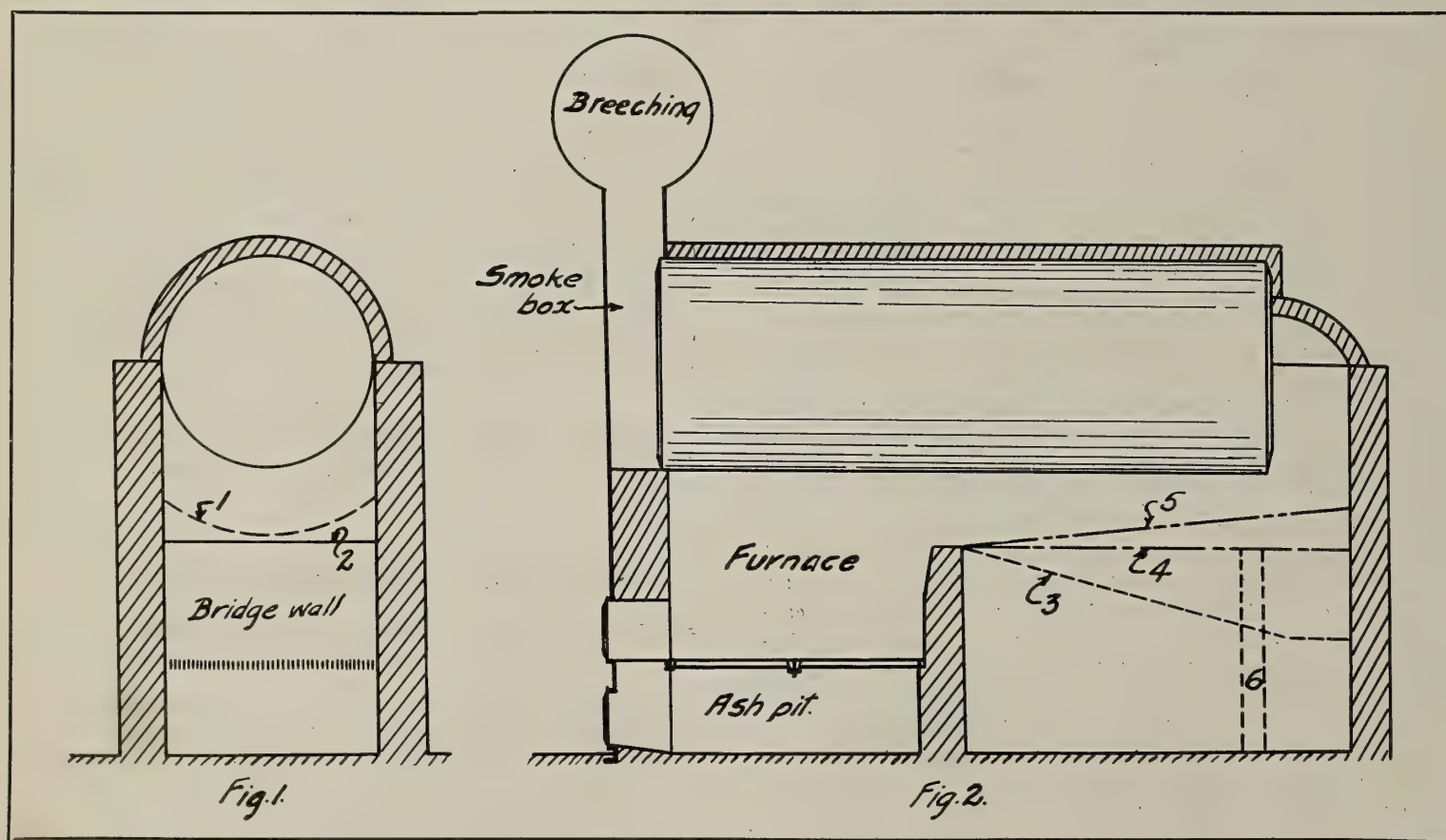
IN the May issue we discussed in a general way several conditions detrimental to the efficient operation of the boiler plant, and suggested means to better matters.

In this instalment we will attempt to discuss what is known to take place in the fuel bed of a boiler furnace and to direct attention to further steps which may be taken to improve the efficiency of the plant.

Various experiments which have been carried out prove conclusively that it is impossible to pass enough air through

in which oxygen of the air combines with carbon of the fuel is sometimes called the oxidizing zone. The rate of oxidation depends, of course, on the rate at which air is forced through the fuel bed; the greater the quantity of air, the faster the rate of oxidation.

That layer of the fuel bed immediately above the oxidizing zone just described is the reducing zone. In this zone a part of the oxygen of the carbon dioxide combines with carbon of the fuel to form carbon monoxide (Co). The so-called



a fuel bed to completely burn the combustible gases. This makes necessary the addition of air above the fuel bed in order to procure complete combustion of the gases rising from the fuel bed. At approximately four inches from the top of the grates nearly all of the oxygen of the air fed through the grates has been used up in combination with carbon, while at the surface of the fuel bed an average of twenty-five per cent. of combustible gases are found, but no oxygen. The following will explain briefly what takes place in the fuel bed of a hand-fired furnace.

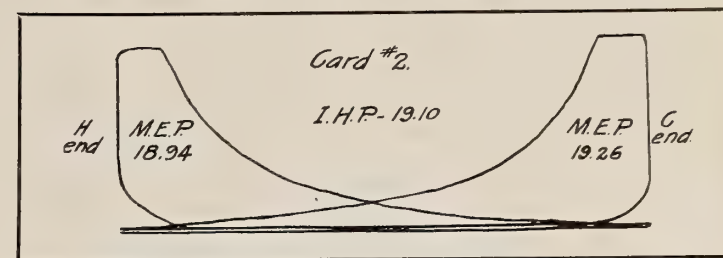
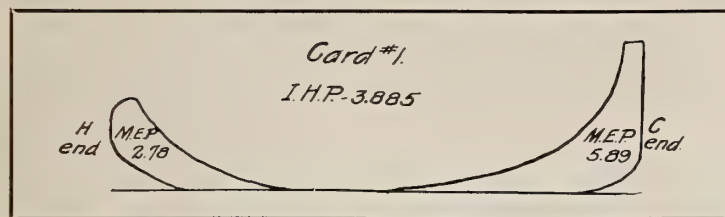
As the air passes through the bottom layer of fuel on top of the grates the oxygen combines with the carbon of the coal, forming carbon dioxide (Co₂). The region in which this action takes place varies in depth with various kinds of fuel. With a six-inch fuel bed of bituminous coal, it is found to be from two to three inches thick, while in a twelve-inch bed of coke it is from four to five inches in depth. The zone

reducing zone extends from the top of the oxidizing zone to the surface of the fuel bed.

The layer at the top of the fuel bed is composed chiefly of fresh fuel. This layer is termed the reducing zone, from the action which takes place here. At this point the fuel is being heated and volatile matter is being driven off. We find in the gases here hydrogen, carburetted hydrogen, unsaturated hydrocarbons and tar and soot, but no oxygen. From this we see that in order to burn these combustible gases, it is imperative that air be admitted above the fire.

Since to procure complete combustion as nearly as possible air must be admitted to the furnace over the fire, let us investigate methods which may be employed to admit this air to the best possible advantage.

As a concrete example we will consider the cylindrical fire tube boiler. These boilers have been used with practically the same type of setting since their first appearance.



A glance at Figs. Nos. 1 and 2 will acquaint one with the essential features of the setting. Slight modifications are made by certain manufacturers or engineers. Several attempts have been made to better the operation of the furnace by changes in the bridge wall and flame bed. Some engineers will have nothing but a curved bridge wall, as indicated by the curved line. Fig. 1—Coming to the flame bed, we find some engineers who favor this, as shown by line marked No. 3 in Fig. No. 2; others who are partial to those as shown by lines No. 4 and No. 5, Fig. 2, and still others who believe that the flame bed should be eliminated, thus leaving a combustion chamber back of the bridge wall. There are those who contend that an advantage is to be gained by having a combustion chamber as just explained, but with a wall which may be termed a secondary bridge wall or baffle wall, as indicated by lines marked 6, Fig. 2. It is doubtful if in actual practice any one of the schemes just outlined have any material advantage over the others, so far as economical operation of the boiler is concerned.

How Air May be Supplied

The writer believes that greater benefit may be derived from a study of how additional air may be supplied to the furnace over the fire rather than just what form the bridge wall or combustion chamber should take. It is believed, too, that great advantage is to be derived by preheating this air. Manufacturers of boilers are to-day designing furnaces with much greater space between the fire and boiler than has heretofore been used. This is also a material help to economical operation.

From a study of several gas bench furnaces which are known to give excellent satisfaction, it is believed that some of the principles employed may be advantageously used in the design of boiler furnaces. Fig. 3 shows in cross section one type of gas bench furnace in which the air is preheated by the waste gases on their way to the chimney. The waste gases travel back and forth the entire length of the furnace through the passages marked 1. The new air to be fed to the furnace travels through the passages marked 2, and absorbs heat from the waste gases. Primary air is admitted to the bottom of the furnace at the points "a," while secondary air at the point "b" mixes with gases from the furnace. The scheme as described makes use of a large part of the heat of the waste gases which otherwise would go to the atmosphere and be wasted.

Scheme to Pre-heat Air

Figures 4 and 5 illustrate a scheme which we believe may be employed to preheat air entering a boiler furnace, making use of the heat in the waste gases for this purpose. They illustrate also how preheated air may be admitted above the fire, which is of importance, as shown earlier in the article. If complete combustion can be attained, smoke will be practically eliminated; deposits of soot or tar on boilers and tubes will be lessened to a great degree. These conditions make it possible to obtain a greater amount of work from the same amount of fuel, thus conserving its supply.

In this connection we would sound a warning. We believe that, with air admitted through openings in the bridge wall,

as shown by figures 4 and 5, a very hot flame will exist in this vicinity, which would make it advisable not to build the bridge wall too close to the boiler or boiler tubes, as the case may be.

The Steam Engine

If your motive power consists of a four-valve reciprocating engine of from 40 h.p. upward, and especially of the Wheelock, Corliss or Brown type, it is essential that your engineer be supplied with a steam engine indicator. The indicator will enable him to know exactly how efficiently steam is being used by the engine. The indicator is in reality to the engineer as of great importance as the X-Ray to the physician.

By glancing at the indicator diagrams shown herewith, it will be observed that Diag. No. 1 was taken on friction load only. The mean-effective pressure is 2.78 on the head end, while on the crank end it is 5.89, or more than double that on the head end. This is a condition very wasteful of steam. The waste is, of course, proportional to the load on the engine and may be of a high value. One end of the cylinder is, of course, doing more work than the other end, which fre-

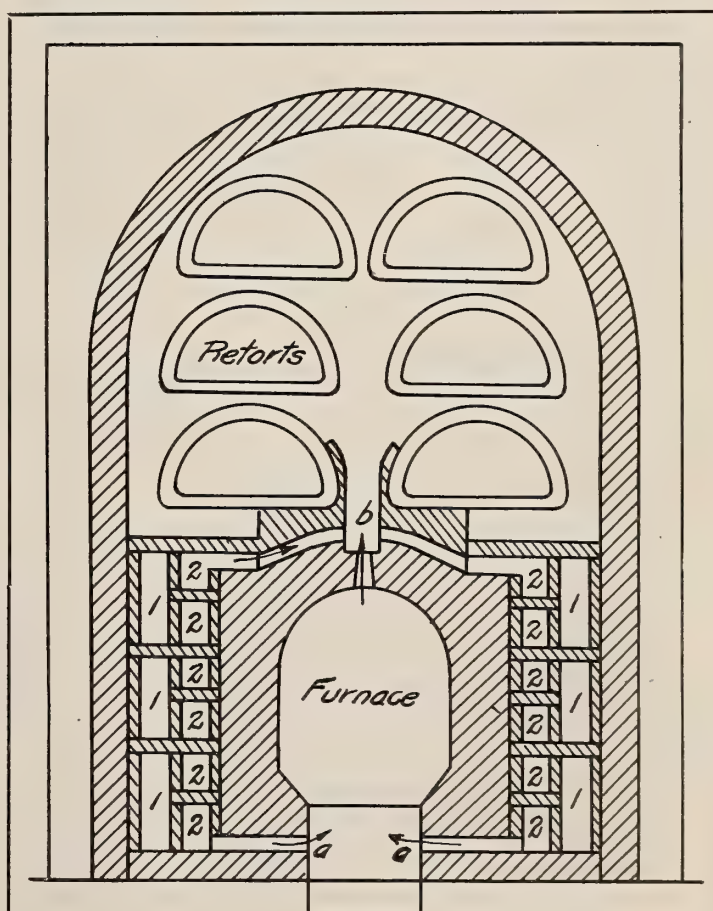


Fig. 3.

Illustrating scheme for pre-heating air to gas bench furnace.

quently will cause flopping of the belt, another source of power wasted. With an indicator diagram it is an easy matter to decide what adjustments should be made.

Indicator card No. 2 was taken about a half-hour after making card No. 1, and after proper adjustments had been made. This diagram shows the mean-effective pressure to be as well balanced as may be expected. A very slight change of load during the time required to change the indicator mechanism for taking a diagram from the other end may easily account for the slight difference.

Steam Piping and Fittings

Make certain that all main piping and fittings are covered with one of the many coverings made for this purpose. This precaution will prevent condensation in steam lines and loss of heat by radiation from hot water lines. Steam should be conducted to the required points at as high temperature and pressure as possible, which will result in less condensate being passed through the engine or heating system, and less work for steam traps to perform.

Piping and fittings should be regularly and carefully inspected to detect leakage in the form of small jets of steam. Such leaks where found should be stopped at once, as they are notoriously wasteful. It requires as much coal to convert boiling water into steam as it does to raise the temperature of water from 32 degrees F. to the boiling point, or 212 degrees F. From this it is also evident that another great saver of fuel is the boiler feed water heater, where exhaust is used to heat the feed water to as high a temperature as is possible.

It is assumed that in giving suggestions for the best operation of the Dunham Vacuum System that operator is in charge of a plant utilizing exhaust steam from an engine or engines through an open feed water heater, and that the

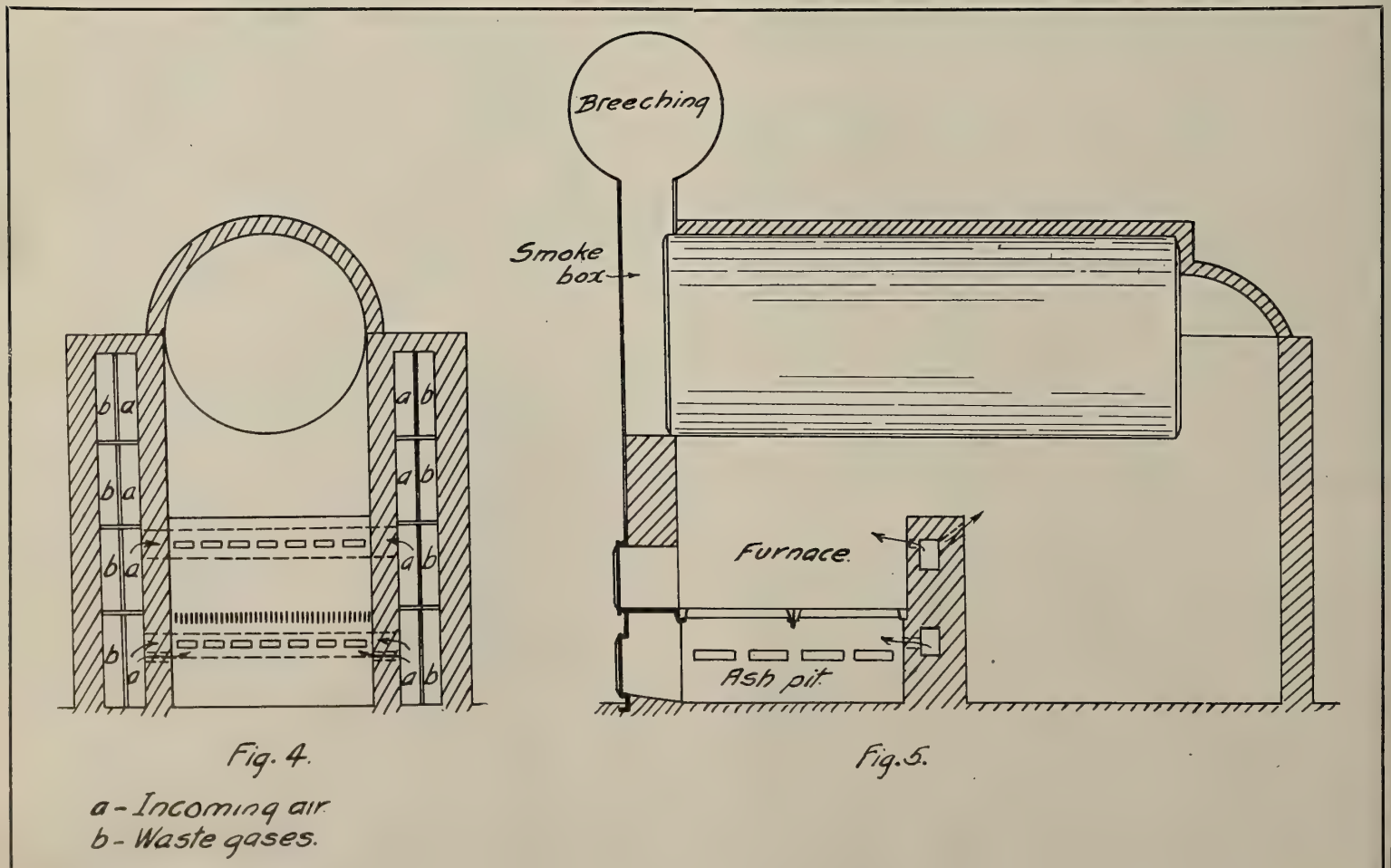
installation is a satisfactory one from the standpoint of design and complete equipment.

There are two mistakes which are made very frequently in connection with the operation of a vacuum system of heating. The first error is the carrying of too much pressure in the heating mains. The other is carelessness in permitting oil to get through into the heating system. When the former condition exists a back pressure is created on the engines which very rapidly increases the amount of steam required for operation. The pressure required should not be in excess of two pounds; usually half to one pound is sufficient for securing the best of circulation throughout all radiation. Keep the pressure down to the minimum. If you do this, you will get better results from your radiator traps, and you will find that the vacuum pump will maintain the proper vacuum with far less work.

Points to Watch

Keep a close watch on the heater; see that the oil-separating apparatus is kept in first-class condition. If you have an arrangement whereby you are using a separate oil separator, clean the separator frequently. See that the drain from the oil separator is kept clear. If a grease trap is in use, inspect it frequently and keep it in first-class working order. If oil gets through into the heating system it coats the inside of the piping and radiators and reduces the radiating efficiency of the system. But the worst feature is that a certain amount of grease gets back to the boilers, and we all know the trouble that this condition causes.

Look well to the governor on your vacuum pump. Keep this working constantly—it is one of the best steam savers in the boiler-room; governor should be set for about 8 in. of vacuum. This amount of vacuum is sufficient for all ordinary purposes; frequently 5 in. will do. The lower the



vacuum carried, the less work the vacuum pump is required to do, and consequently the less steam is consumed in the performing of this work. Of course, if there are lifts in the returns or special conditions to meet, the vacuum must be carried accordingly.

Clean the radiator traps at least once a year. You accomplish two things in this way. First, you keep the traps in a thoroughly clean condition, which minimizes the amount of steam passed through them, and, secondly, the inspection enables you to locate any defective parts that might develop during the working season.

Look well to your reducing valve. There are always times when live steam is used in the system when exhaust steam is not available. The reducing valve should be set so that no more pressure is used in the system when the reducing valve is in use than when the exhaust steam is being used.

Be sure the back pressure valve is not leaking. Often a back pressure valve is permitted to become out of repair, and a considerable amount of exhaust steam is lost that could be used in the heater and in the heating system. An occasional inspection of the back pressure valve is necessary.

Bear in mind that automatic equipment requires attention occasionally. Do not let it run until it breaks down. A systematic inspection of the various equipments will often-times avoid expensive repairs and loss.

Briefly summed up: Keep the pressure as low as possible in the heating mains; carry only sufficient vacuum to establish complete circulation—an ideal system should operate on a half-pound pressure and six to eight inches of vacuum. Keep your heater and oil-separating apparatus in perfect working order; inspect all traps at least once a year. And remember this—your heating system will give you satisfaction and efficiency in proportion to the care and intelligence used in connection with its operation.

Would Train Women Workers

Engineers' Organizations Urge Educational Institutions to Provide Technical Courses for Women, so that They May Help Overcome the Labor Shortage

The following motion was passed by the Detroit Section of the American Society of Mechanical Engineers and the Detroit Engineering Society in joint session on May 3rd.

The material embodied in this resolution has been so highly thought of by the New York office of the A.S.M.E. that they have asked the local secretaries of all branches and sections of the society to place it before the industrial and technical press and in this way perform a real war service.

Whereas the demands of the country for men and means to fight the war has resulted in a deficiency of skilled workers in the trades and professions; and

Whereas the women of this country could with a short period of training fit themselves to fill these positions, as women have done in other countries at war; and

Whereas among the things which women could do advantageously are *drafting and tracing, inspection and testing of materials, both physically and chemically*; therefore

Resolved that the Universities, Colleges and Technical Schools throughout the land be asked to consider the question of meeting this demand by providing special courses of instruction open to women students qualified to pursue such courses, and further

Resolved that employers who could use such skilled help exert their influence with their Universities, Colleges and Technical Schools, and co-operate with them in developing and making available a great body of intelligent and adaptable women who are as eager and willing to serve their country as their brothers;

Thereby bringing about not only increased effectiveness in fighting the war, but also a greater mutual respect and saner relationship of our men and women.

The Mechanical Restaurant

How It Serves from 120 to 160 Meals per Minute Through the Noon Hour

In the great electrical plant at Schenectady, N.Y., where meals are served to 3,500 employees per day, the dinners of five years ago are still possible at the same 25-cent charge, in spite of the persistently higher cost of living. This is made possible by skilful application of engineering principles in the kitchen and in the serving room.

Of the 3,500 meals served daily, 500 are breakfasts, 200 midnight lunches, 300 suppers, and 800 are delivered in the shops. This leaves 1,700 meals to be served during the noon period in the main restaurant building.

The essential feature of the new service was the installation of a self-serving system, expedited by four conveyor belts. Under the old plan fifty waitresses served approximately 1,000 meals, each waitress delivering food for twenty customers. With the new arrangement 1,700 men serve 1,700 meals—to themselves. The average time required by a customer, from the pay-as-you-enter cash desk till he is served and seated, is less than one minute. The procedure is as follows:

Promptly at the blowing of the noon whistle four lines of men form in front of four cash registers to purchase their luncheon tickets. A cashier will make change and sell twenty-nine tickets per minute. After the men file past the cash desk they approach at right angles the end of one of the four belt conveyors. Adjacent to the nearer end of this is a station at which the ticket is exchanged for an aluminum tray. This is deposited by the luncher-to-be upon the conveyor, which moves it along the front of the food counter at the rate of sixty-five feet per minute, allowing the customer fifteen seconds in which to select his food. Following his tray as it slides down the line, he helps himself, first to meat or fish, then to potatoes and tomatoes, next to pudding or pie, and finally to milk or coffee. All these articles are waiting for him on a hot steam table parallel to and behind the belt. By the time he has got all that is coming to him he and his tray are at the other end of the belt, where the checker O.K.'s the contents of the tray and permits the man to proceed.

After removing his tray of lunch from the conveyor the diner takes it to his seat. It is not exactly a reserved seat, but it is nevertheless an assured seat, because tickets are sold only up to the seating capacity of the big room. But the capacity of the restaurant is much greater than would be indicated by the number of seats, because many men have finished eating by 12.10 and gone away. Thus, one of the benefits of the system is that the trays, dishes, silver and glasses used by early arrivals are promptly washed and ready for the second detachment. In this way it is possible for 1,700 people to be served with only 1,300 sets of dishes and eating tools.

Each conveyor serves from thirty to forty people per minute, and since there are four of them, from 120 to 160 meals can be served each minute throughout the noon period. Opportunity has accordingly not yet been afforded for testing the new arrangement to its maximum capacity. In 1916, under the old system, 150 restaurant employees were required to serve approximately 950 meals. In 1917 the lunch-room staff had been reduced to 66, employed in the kitchen and in keeping the steam tables filled with the several dishes; and, despite this economy, 1,700 meals are served better and more quickly.

Electric motor driven devices are used to do all the mechanical work, such as cutting bread, peeling potatoes and other vegetables, chopping meat, mixing dough, beating eggs, etc. Only such items as require for their performance human hands and human intelligence are left to man-power.—*Scientific American*.

The Toronto Branch Reviews Its Work

Proceedings at the Eighteenth Annual Meeting Held Last Month in Toronto—Industrial Problems and Their Solution Are Discussed; Committee Reports Considered and Officers Elected; Major Anthes Re-elected Chairman by Acclamation

By H. MACDONALD

Assistant Secretary, Canadian Manufacturers Association

WITH the passing of its Eighteenth Annual Meeting, the Toronto Branch of the Canadian Manufacturers Association closed the record for the busiest year of its history. It opens a new book, upon the pages of which none can foretell what will be written. The past is full of useful lessons, and the future of unlimited possibilities if we but rise to the occasion as Canadians.

The meeting was held in the Assembly Hall of the Toronto Board of Trade, on May 16th, and was well attended, more particularly at the evening session, which was convened after dinner in the Luncheon Club. Many matters of importance came to the attention of the manufacturers, but Technical Education, the development of Scientific and Industrial Research, and the Housing Problem, overshadowed all others. We have reached a stage where there is no longer a choice between an academic education and an industrial occupation, because a successful career in industry demands an education. It is not enough that a workman possesses skill in the operation of his trade; he must be mentally alert and well-informed. The members present displayed a keen and active interest in the discussion on the various reports.

Major L. L. Anthes, chairman of the Branch, who presided, delivered an excellent address on special features of the past year's achievements and on prospective problems. His address in part was as follows:

"I might fairly say that practically all the big problems that occupied the attention of the Executive Council during the past year originated within the Toronto Branch, owing to the fact that the general offices of the Association are located in Toronto, thus enabling the Executive to secure expert advice and get quick action. The fact of the residence of the President, Mr. Parsons, in Toronto, has also been an advantage in his being at all times accessible for advice and conference. . . .

"The war, during the past four years, has gradually changed the national and international life of the whole world. Nowhere are conditions normal—intense industrial activity in some trades goes hand in hand with industrial stagnation in others. But there is one fact of which I am firmly convinced: when we individually and collectively realize that every man and woman within the Empire has his and her economic value in the prosecution of this war, and that economic value is appreciated and brought to bear in the struggle, then shall we begin to see the bright lining of the great enveloping war-

cloud. Germany's capitalized brain power will meet its master. We must fight fire with fire, efficiency with efficiency. The resourcefulness, doggedness and initiative of the Anglo-Saxon race, fighting in the noblest of all causes—that of freedom against oppression—is bound to prevail ultimately. Great and many are the sacrifices that have been made, deep and widespread are the shadows that have penetrated many homes, but our sorrows must not overburden us, rather spur us to further action. . . .

"We, who are far from the sound of battle, have our part to play, and if we do not acquit ourselves like men we are unworthy of the sacrifices being made for us to give us a perpetual heritage of freedom. . . .

"There were those who declared that Canadian industry was not equal to the highly technical demands in the manufacture of instruments of war. Canada had belied this pessimism, and to-day is turning out millions of dollars' worth of munitions, so that our industries have become a positive factor in Britain's ability to hold the allied line on the stricken fields of Europe."

Major Anthes emphasized the need for getting the utmost efficiency from our man power. Those who will not work should be compelled to do so. This is not a quarrel with labor, but is a challenge to those who dodge "labor," be they aliens or native born. Unhappily for years capital and labor have been represented as the antithesis of one another. This is a great economic error, for both capital and labor are interdependent. Sometimes both have been badly administered, resulting in bitter industrial wars. Both claim our sympathy. They are the outstanding factors of our industrial

life, and it is our duty to educate not only labor, but those who control capital, for the employment of labor, to respect each other's rights and to co-operate in our industrial developments. Prejudices must be overcome. Past grievances must be forgotten, and the spirit of "British fair play," which is illuminating the world to-day, must prevail.

With capital and labor reconciled, we have the basic essentials of industrial development. Encouragement to and constructive policies of scientific and industrial research must be foremost aims. Technical and industrial education must be promoted so that the brain-power of our young manhood and womanhood can grapple with problems which require insight and skill.

We are hampered with embargoes and restrictions of basic imports from the United States, and so serious has this be-



—B. and C. Press Photo.

Major L. L. Anthes

Anthes Foundry, Limited. Re-elected Chairman, Toronto Branch

come that many industries are threatened with ruin. This is a condition that must be overcome by our becoming self-sustaining. Capital, labor and the leaders of industry must work together, and, if necessary, fight together.

The necessity for more shipbuilding is overwhelming. In 1917, the net shipping losses of the Allies were 598 vessels—a fleet sufficient to import all the wheat that Great Britain needs and from 50 per cent. to 75 per cent. of all the food that it has to import. This emergency offers Canada an unparalleled opportunity to build and own a mercantile marine worthy of this great country.

The Housing Problem

In the provision for housing the increased population that new industries will bring, it is imperative that something practical be done. The present condition, if allowed to remain, will enfeeble our national vitality and increase crime and degeneracy. The attempted reduction of the appropriation for the Health Department of the City of Toronto was a decidedly retrograde step. The sooner our municipal and provincial governments co-operate in a practical way to ameliorate existing conditions, the better.

The outlook for the ensuing year seems to promise continued industrial activity. If, however, we stand at the threshold of a new year with less prophetic sight, we also stand with strengthened purpose to persevere to a victorious end. The war will inevitably be followed by a period of readjustment, during which those who have been conserving their resources in the meantime, will benefit from that course.

The Executive Committee report summarized the work handled in the course of the year, including scientific and industrial research, the fuel situation, employment of returned soldiers, employment bureaux, charities and advertising bureaux through which considerable savings were effected for members.

The committee rendered organized assistance in floating the Victory War Loan to a triumphant success. It opposed the Boards of Education Act, designed to make the jurisdiction of the Board of Education for maintenance of schools subject to the approval of the City, and the Bill was defeated.

The registration of students at the Central Technical School showed an attendance of 8,711, an increase over that of all previous years. The Branch provided prizes to the value of \$200 for the evening school students, and the Scholarship Scheme, inaugurated two years ago, enables the committee to place 45 scholarships of \$25 each, or a total of \$1,125, at the disposal of Dr. McKay for competition by the students of the day courses.

It was stated that the services of young people trained in technical and industrial work is very much greater than the supply.

The problem of fire waste received the careful attention of the Committee, and was still under advisement.

Retroactive Taxation

The report opposed retroactive taxation. Nothing could more unsettle the enterprise of the future than to threaten the continuous reopening of the pre-closed business of the past. By disproportionate taxation of industry, national industrial organization is prejudiced and employment restricted.

While the Committee, from the viewpoint of sentiment, was strongly opposed to the employment, under present conditions, of alien labor, it admitted that any drastic reduction of their earnings might have a fatal result on production.

Toronto is faced this year, as might be expected, with the highest tax rate in its history, of 30½ mills. It should be our aim, however, to meet our taxes now when we can best

afford it, owing to prosperous conditions, rather than pass them along to a period when we may be less able to shoulder them. We have unlimited confidence in the prudence and forethought of our civic Finance Commissioner, Mr. Thomas Bradshaw.

The Canadian National Exhibition Committee's report told of a helpful constructive policy and a gradual improvement in buildings, booths and exhibits.

The report of the Secretary, H. Macdonald, showed that 36 applications for membership had been received, and 17 resignations, most of which went out of business during the year, chiefly owing to abnormal trade conditions. The membership of Toronto Branch is now 819 firms and corporations.

The volume of legislation presented at the recent session of the Ontario Legislature was reported to be smaller than usual, but 147 Bills were introduced, which, by reduction or consolidation, were reduced to 87, all of which had been examined by the Secretary.

Sir John Willison, in the course of an address, urged the necessity for the West extending its efforts to creating industrial pursuits amongst its people.

Principal McKay spoke of the work done by the Technical School, and Lieut.-Col. Alexander Fraser stated that the Association should co-operate with the schools.

Mr. Thomas Roden, Chairman Industrial Research Committee, urged the claims of Scientific and Industrial Research in aid of the industries. The manufacturers had promised financial co-operation with the Government, but when they asked for bread they were given a stone.

Resolutions Passed

Resolutions were passed as follows:

That the Board of Education should approach the Provincial Government, with a view to getting provincial assistance for the development of the plan outlined by the Royal Commission on Industrial Training and Technical Education;

That the Dominion Government organize information bureaux and institute a laboratory for scientific and industrial research for the solution of industrial problems, and that the Association be given larger representation on the Advisory Council;

That the Toronto Branch of the Canadian Manufacturers Association reaffirm its deep and unremitting interest in the question of industrial housing, and call for joint Government action;

And that the Provincial Government be petitioned to give the matter of fire prevention immediate attention.

The following officers were elected for the ensuing year:

Chairman.—Major L. L. Anthes (re-elected by acclamation), Anthes Foundry, Limited.

Vice-Chairman.—James A. Riordan, Standard Sanitary Mfg. Co., Ltd.

Executive Committee.—G. Frank Beer, Carty Building; S. H. Chapman, Ontario Wind Engine & Pump Co.; G. B. Clarke, A. R. Clarke & Co., Ltd.; R. H. Easson, Otto Higel Co., Ltd.; E. J. Freyseng, Freyseng Cork Co., Ltd.; A. H. Jeffrey, Polson Iron Works, Ltd.; W. C. Laidlaw, R. Laidlaw Lumber Co., Ltd.; Jas. Litster, Litster Pure Food Co., Ltd.; R. L. McIntyre, McGregor & McIntyre, Ltd.; T. F. Monypenny, Imperial Varnish & Color Co., Ltd.; J. P. Murray, 445 Euclid Ave.; J. Allan Ross, Wm. Wrigley, Jr., Co., Ltd.; J. A. Scythes, J. A. Scythes & Co., Ltd.; E. G. Staunton, Stauntons', Limited; W. B. Tindall, Consumers' Box & Lumber Co., Ltd.; I. H. Weldon, Provincial Paper Mills Co., Ltd.; J. Westren, Dunlop Tire & Rubber Goods Co., Ltd.

Representatives to the Canadian National Exhibition Association.—Geo. Brigden, Brigden's, Limited; S. H. Chapman, Ontario Wind Engine & Pump Co., Ltd.; W. C. Coulter, Booth-Coulter Copper & Brass Co., Ltd.; John Firstbrook, Firstbrook Bros., Ltd.; E. J. Freyseng, Freyseng Cork Co., Ltd.; Sam. Harris, Harris Lithographing Co., Ltd.; J. S. McKinnon,

S. F. McKinnon Co., Ltd.; T. F. Monypenny, Imperial Varnish & Color Co., Ltd.; Jas. P. Murray, 445 Euclid Ave.; S. R. Parsons, British American Oil Co., Ltd.; Thos. Roden, Roden Bros., Ltd.; T. A. Russell, Russell Motor Car Co., Ltd.

Representatives to the Executive Council.—Geo. Brigden, Brigden's, Limited; A. D. Campbell, Campbell Flour Mills Co., Ltd.; W. C. Coulter, Booth-Coulter Copper & Brass Co., Ltd.; Thos. Findley, Massey-Harris Co., Ltd.; John Firstbrook, Firstbrook Bros., Ltd.; E. J. Freyseng, Freyseng Cork Co., Ltd.; Sam. Harris, Harris Lithographing Co., Ltd.; W. C. Laidlaw, R. Laidlaw Lumber Co., Ltd.; R. L. McIntyre, McGregor & McIntyre, Ltd.; J. S. McKinnon, S. F. McKinnon & Co., Ltd.; T. F. Monypenny, Imperial Varnish & Color Co., Ltd.; J. P. Murray, 445 Euclid Ave.; A. Neighorn, Nichols Chemical Co., Ltd.; J. A. Riordan, Standard Sanitary Mfg. Co., Ltd.; Thos. Roden, Roden Bros., Ltd.; J. Allan Ross, Wm. Wrigley, Jr., Co., Ltd.; W. B. Tindall, Consumers' Box and Lumber Co., Ltd.

New Plant Completed

Addition to Galt Factory of Canada Machinery Corporation Opened Last Month With Mammoth Social Function

To mark the completion of a new addition to their plant in Galt, the Canada Machinery Corporation, on the night of May 17, turned the new building over to the Employees' Mutual Benefit Society, who staged an elaborate entertainment and dance within its walls. Over three thousand persons were present. The building was lavishly decorated for the occasion, and all the arrangements, down to the last detail of a bounteous supper, were carefully attended to.

The proceedings began with a short address from Mr. T. H. Watson, president of the Corporation, and chairman of the evening. He extended a welcome to those present, vindicated the holding of such gatherings in war time as a valuable means of refreshing and encouraging the munition workers, and told about the bringing of the Hamilton plant to Galt. He was followed by Acting-Mayor Charlton, and then a concert was held. This done, the dancing began, and this part of the programme lasted until daybreak.

An Up-to-date Building

The new building is one of the finest and most up-to-date in Galt or vicinity. It is practically fireproof, being of all-steel and masonry with the exception of the roof, which consists of 3-inch planking and fire-proof felt roofing. The building as a whole is 182 feet long, and consists of three bays. The

centre bay is 51 feet wide and 36 feet high and covered with a gable roof. As this portion of the building projects above the other bays, ample light for the centre of the building is procured by means of lantern windows. These windows, swivelling in the centre and being under control from the floor, give excellent ventilation. A twenty-five ton Niles electric crane, 24 feet above the floor, makes it possible to handle the heaviest castings or machines along the entire length of the building, and to load or unload same to or from the G.T.R. switch, which enters the building at the south end. The second or west bay is 46 feet wide and is lighted by what is practically an all-glass wall. The east bay, which is 89 feet wide, is covered by a modern saw-tooth type roof, which provides the maximum amount of light and ventilation. Two smaller cranes are installed in this bay. Both of these latter portions of the building have a clear overhead space of 16 feet. The total area of the building is 34,400 sq. ft., unobstructed by interior walls or other obstructions excepting the steel roof supports. The flooring consists of a thick concrete base, overlaid by 2-inch pine planking bedded in pitch, and in turn covered by hardwood matched flooring.

Some Special Features

What at once attracts the notice of every practical shop man is the entire absence of steam, water or heating pipes or electric wiring, all these services being contained in underground distribution ducts. These ducts, into which one may descend by trap doors in the floor, are very large and act primarily to convey heat to the various portions of the building, and are built of solid concrete.

The heating apparatus consists of a large steel plate fan with direct connected steam engine, and headers of steam coils installed by Sheldons, Limited. It is situated in the centre of the east bay. This system of heating has the advantages in that while it will rapidly warm up a building, it provides an even distribution of heat as well as a constant change of air.

The matter of daytime lighting having been fully explained in the preceding description, it remains only to say that every effort has been made to have the artificial lighting unexcelled. While the lower portions of the building interior are painted black, the upper portions are white, for the purpose of making the building as bright as possible.

The centre floor is to be used in part for the placing of some of the heaviest iron tools used in this section of the country, including 10-16-foot boring mill, large planers and large horizontal borers, the remainder being utilized to build such large and heavy iron tools as have previously been built by this firm only with difficulty. The west bay will be filled with somewhat lighter machinery, while the east bay will consist of an erecting floor for lighter tools and of a smithing shop, which will be located at the south end. The smithing shop is provided with a cement floor.

Electricity, generated by steam in the company's present power-house and conducted to the various points of service by underground ducts, is the form of the power to be used, but by means of a rotary transformer Hydro current can also be used for overtime work and lighting.



Steel Freighter built in Toronto

The "Troja," product of the Dominion Shipbuilding Company, and designed for ocean traffic; she was successfully launched last month

Activities of the Maritime Branch in May

Annual Meeting Was Held in Moncton on May 29—New Brunswick Takes Action on Water-Powers Following Representations by the Branch—Also Passes a Novel Vocational Educational Act at Instance of the Association—Greater Use of the Service of the Association Urged in Circular

By H. R. THOMPSON

Secretary, Maritime Branch, Canadian Manufacturers Association

THE annual meeting of the Maritime Branch, Canadian Manufacturers Association, was held in Moncton on May 29. Several interesting addresses were on the programme, which will be published in due course in *INDUSTRIAL CANADA*, and these addresses were followed by discussions in which several members participated.

At the morning session, an address of welcome was delivered by J. B. Toombs, Mayor of Moncton, following which came an address on Workmen's Compensation by F. G. G. Knowlton, Chairman of the New Brunswick Workmen's Compensation Commission. E. B. Saunders, Field Secretary of the National Safety Council, Chicago, spoke on "Accident Prevention."

At the afternoon session, addresses were delivered by Hon. O. T. Daniels, Attorney-General of Nova Scotia, on "Subsidies in Lieu of Land Grants"; F. H. Sexton, Principal, Nova Scotia Technical College, on "Education"; Professor Clarkson, Engineer Cape Split Power Co., on "Water Power Development," and by Hon. J. B. M. Baxter and H. J. Logan on "Maritime Union."

In explanation of the address by Mr. Daniels, it is the contention of the Maritime Branch that, whereas other provinces were enlarged by grants of land, which would naturally increase their revenue, the Maritime Provinces should receive increased subsidies which would assist in providing the necessary funds to improve their educational systems.

Circular to Members

The secretary recently mailed a circular to members in an effort to get them more interested in the Association. The circular read as follows:

"In the present day no organization can justify its existence unless its chief aim or object is one of Service.

"We can truthfully say that the objects of the Canadian Manufacturers Association are entirely of Service. Some of its members realize this more than others as they have taken advantage of what the Association has to offer. Have you overlooked the fact that your membership fee entitles you to the services of the officials at the head office in Toronto, who are ready at all times to give you expert advice on all matters pertaining to: Company Law, Insurance, Transportation, Tariff, Export Trade, and all subjects of a commercial nature. No enquiry is too trifling to receive prompt and careful attention.

"The Association also provides the manufacturers of Canada with an organization through which they can work together to achieve results impossible of accomplishment to the individual. This is being exemplified every day.

"The Association is governed by a Council of the brainiest and most successful business men in our country, who go to Toronto every month at their own expense to oversee the work and assist in the solution of the many problems that arise.

"The Association is yours, all the privileges which it has to offer are yours. Please consider it's staff as part of your personal staff and use it. In these days of keen competition no member should overlook the fact that expert advice can be had for the asking.

"We are mailing you a copy of the Constitution and By-laws of the Maritime Branch, as another reminder that we have an organization and office close at hand through which we can work in matters of local interest.

"The Association's official organ, *INDUSTRIAL CANADA*, is constantly being improved, and to-day it is recognized as the leading journal of its kind published in Canada. It is well worth reading regularly and should be kept separate from the mass of other literature which it is difficult to find time to read. It furnishes the latest information on practically every phase of industrial activity. We would suggest, as the late numbers do, and the future ones will, contain special features, that they be filed in a convenient place for ready reference. If there are any matters of a commercial nature that you would like to see reviewed in its columns, the secretary will be pleased to have you advise him."

Water Powers of New Brunswick

Following up a resolution passed at the Sydney Convention last October, requesting the Legislative Assembly of New Brunswick to appoint a commission to survey and to assist in any way toward the development of the water-powers in that province, Premier Foster was requested to take some definite action along these lines. The Branch's representatives were successful and the subject received attention during the recent session of the New Brunswick Legislature. Writing to the secretary of the Branch on May 18, Premier Foster said:

"I beg to acknowledge receipt of your letter of May 14th asking what action, if any, our Government has taken with respect to water power development in New Brunswick. In reply, I beg to say that at the Session of the House recently held, an amount was placed in the estimates for investigation of water powers in this province, such investigation to be held in co-operation with the water power branch of the Dominion Conservation Commission. We hope at an early date to be able to make a contract with the above and to have the work proceed along the line of the manner and way in which it has been carried on in the Province of Nova Scotia. As for any actual development itself, no definite plans for the future have been decided upon in this respect."

Vocational Educational Act

The representations made by the Maritime Branch and its members during the past year were instrumental in having a Vocational Educational Act passed by the New Brunswick Legislature without a dissenting voice. The provisions of the Act, in short, are about as follows:

In cities and incorporated towns, the Board of School Trustees may apply, on the recommendation of the Local Council, and in districts where the school trustees are elected, the ratepayers may at any annual meeting, by resolution, request the trustees of such school districts to apply, to the Vocational Education Board, appointed under the Act, for power to establish, equip and maintain, a vocational school, and if such application is approved by the Educational Board, the city, town, or school trustees so applying shall have power to assess and collect a sufficient sum for the purpose of establishing and equipping a suitable building, and for otherwise carrying on the work, under the direction of a local Vocational

Committee, including the three members of the School Board and two others who shall be representatives of labor and capital respectively.

The province is to pay annually to the Local Vocational Committee an amount equal to one-half of the maintenance cost. The money necessary for the administration of this Act, and for the preparation of teachers for a school established under its provisions, shall be paid from the Provincial Treasury. This Act, though somewhat novel, is considered an up-to-date piece of legislation, and should be taken advantage of by the manufacturing communities.

Amend Companies' Act

We were successful in having section 73 of the Nova Scotia Companies' Act amended at the recent session of the Legislature, allowing the use of the contraction "Ltd." in place of the word "Limited" as part of the name of an incorporated company.

The time of the secretary during the month of May was pretty well taken up preparing for the annual meeting of the Branch.

The Small Manufacturer in Export Trade*

**Because a Manufacturer May Be Classed as Small in Comparison With Some Others,
He Necessarily Should Not Refrain from Endeavoring to Extend His Market
to Other Countries, but Should Take Advantage of Government
Agencies to Arrive at a Decision**

By W. M. BENNEY

Manager, Foreign Trade Department, National Association of Manufacturers

A LETTER from a New England writer who referred to advocacy of foreign trade as "fool talk" was laid on my desk a few days ago. The writer argued, as many did a generation ago, that we could not meet foreign competition in other countries and that if we did our domestic business in some way was bound to suffer. That would be a strange doctrine to preach to the present generation of manufacturers in Cincinnati, a city which nearly twenty-four years ago had the enterprise to gather here representative manufacturers of the whole country to form a national organization to be wholly supported and controlled by manufacturers, an organization that would encourage national industrial development and domestic measures in the interests of manufacturers and the country at large, and at the same time give special attention to the promotion of foreign trade. The organization thus born in Cincinnati has grown with the growth of the country, and probably the majority of the manufacturers present belong to it, namely, the National Association of Manufacturers, whose work in foreign trade development is known in business and official circles throughout the civilized world.

How Exports Grow

When the National Association of Manufacturers was formed in 1895 our exports of manufactured and partly manufactured goods (not including foodstuffs) only made up about one-quarter (26 per cent.) of the value of our exports, while in the fiscal year, 1914, which ended only a few weeks before the great war broke out, the proportion of manufactured and partly manufactured goods had increased to 47 per cent. of our total exports, while the value of such exports was five times as great in 1914 as in 1895.

The war, because it has continued for so long a time, has caused another great advance in the proportion of manufactured and partly manufactured goods exported, as they amounted in the last calendar year (1917) to 65 per cent. of our total exports.

We do not expect exports measured in dollars to continue in the same volume as now in the years immediately following the war, but we do expect the proportion of manufactured

goods going abroad from this country to increase progressively over that of the year preceding the war.

The question of who are going to be the chief instruments in bringing about this increase leads us to the subject of this group conference. All of us are aware that the enormous increase in the value of exports during the war is not the result of extra initiatory effort to that end on the part of our manufacturers but is due to the fact that since the war began we have been the one great source of supply to which the greater part of the world has looked to meet its needs in manufactured products.

Continuance of Export Trade

For a time after peace is concluded there will, no doubt, be a large demand for a variety of American products coming to this country without solicitation on the part of our business people, but we all know that the continuance of our export trade on a large scale in manufactured goods and the enlargement of that trade must depend on our own efforts in the same way that we continue and extend our domestic trade.

But who will see to the continuance and extension of our foreign business? Chiefly the concerns that had built up that trade before the war to the encouraging proportions it had attained, namely, trading companies, export commission merchants and agents and a small proportion of manufacturers, based on the producing capacity of the whole country.

But the stimulus which the war has given to overseas commerce and the volume of foreign orders for goods which have come unsolicited to manufacturers all over the land has naturally operated to increase the interest in the possibilities of foreign trade on the part of many of our people who heretofore had given but little or no attention to the subject. To many of them has come the question of whether it would be wise for them to seek direct business connections abroad when the war is over.

I have just said that our export trade has been built up by a small proportion of manufacturers. This is literally the case. The last United States census enumerated 275,000 manufacturing establishments in this country, but of these over 170,000 had five or less wage earners, while establishments with over 100 employees numbered less than 14,000. Establishments employing 250 wage earners or more numbered only a little over 5,000, and the establishments with a million dol-

*An address delivered at the Fifth National Foreign Trade Convention, Cincinnati.

lars capital or over were less than 4,000, but the 4,000 produced about as much as the remaining 270,000.

Now, I do not mean to imply that the question of whether or not to engage in foreign trade must be based on the number of employees in establishments, but it would be unwise to expect and useless to advise manufacturers with only a few employees to dissipate their energies in an attempt to cover a broad field when their resources are only adequate for taking care of a very local market. In fact, I am not undertaking to advise any manufacturer to engage in foreign trade. In the nature of things it is only a small percentage of manufacturers in the United States or any other country that is in a position to essay the cultivation of a wide area of territory whether at home or abroad and at the same time effectively maintain and increase its business in the locality from which it necessarily must draw the largest share of their support.

But I would not take the ground that, because a manufacturer may be classed as small in comparison with some others, he necessarily should not refrain from endeavoring to extend his market to other countries. That I consider is a subject for each and every manufacturer to decide for himself. And, fortunately for him, this country through certain Government departments and special trade organizations provides him with ways and means for intelligently arriving at a decision without any great expenditure of time or money on his part.

It may not infrequently happen on the part of the comparatively small manufacturer that he finds he has the resources and facilities for considerably expanding his business. He may be so situated, or the competition in his line may be of such character, that careful survey of conditions shows him that the effort or risk to extend his market to certain foreign lands would be no greater than to develop a wider market in the United States. This brings up the initiatory problems which are the subjects of this session, and which are too many to take up in detail in this discussion. For the manufacturer to whom it is a problem whether or not to engage more or less directly in the cultivation of foreign trade, I advise studying a paper on that subject prepared by the secretary of this session, Dr. Pratt, for the International Trade Conference, conducted by the National Association of Manufacturers in 1915. Dr. Pratt covered the subject more fully and completely in that paper than it has been done in any other one article to my knowledge.

No Undue Risks

I wish, however, to call attention to one important matter, and that is, so many seem to think that cultivation of direct foreign trade means taking undue credit risks. My understanding of direct foreign trading is that intelligent and continuous effort on the part of the manufacturer to keep in touch through his personal representative, through advertising or through correspondence, or all three, with the importers of his goods in other lands. He may or may not undertake the further responsibility of direct shipments through his own forwarders and collecting his drafts on his customers through banks of his own selection. On the contrary, he may confine his efforts to seeing that his goods are made known in the markets which he has chosen to cultivate and that his customers' orders are properly filled, and have the further financial and other responsibilities shouldered by arrangements with established export houses. Co-operation of this kind, I think, has become more and more common between enterprising manufacturers and export commission merchants, now that these two great factors in foreign trade have a better understanding of each other's methods and motives.

What I would say here is that so far as risks are concerned in export trade, in my twenty years' confidential relations with exporting manufacturers, I have yet to learn of one

who has prepared the way for entering foreign markets in the same careful manner that has made him successful at home, whose losses on foreign accounts have been as large as those which he considers normal in his domestic business.

Despite the fact that the bulk of the manufactured products of this country in a large number of lines is now made by a comparatively small number of establishments operating with a capital which would have been considered enormous less than a generation ago, there will probably always be with us large numbers of establishments manufacturing on a small scale with limited capital, partly for the reason that the very development of the large concerns operates to create unlooked-for opportunities for the enterprising man to engage in the manufacturing of specialties.

Nevertheless, we must all recognize the old doctrine that "Competition is the Life of Trade," is not subscribed to as heartily now as heretofore, and that it is realized that some regulation of competition is necessary to insure the harmonious and healthy growth of the business of the country.

Co-operation Will Help

So in the export field—while the individual manufacturer of moderate means may cultivate foreign markets with a fair chance of success, as is proven by the fact that he is doing it, nevertheless his numbers are comparatively small and it is obvious that more satisfactory results in many lines might be secured by co-operation with other manufacturers and that the prospects for progressive increase in our overseas trade would be greatly enhanced by the formation of energetic co-operative selling agencies on the part of the producers of the goods to be sold abroad.

A law has just been signed by the President permitting of selling combinations of this character without fear of being unduly hampered by the operation of our anti-trust laws. We expect to see this law promptly taken advantage of by a number of producers on a large scale of many commodities which find large markets abroad and which have heretofore been handicapped in meeting organized and Government supported competition on the part of their leading competitors.

For the smaller classes of manufacturers who desire to extend the market for their wares to other lands, they have now the choice of three methods of securing that extension of trade, namely, by individual effort on their own part, by forming selling associations with domestic competitors or with makers of allied lines, or by full co-operation with the established trading companies which were always in the field and whose far-seeing enterprise, energy and successful work are splendidly exemplified in the great corporation of which the chairman of this group session has so long been one of the guiding spirits and also by that important company with which the secretary of this session is now identified.

Canadian Coal in Hawaii

Japanese coal in the Hawaii market has almost lost its position owing to limited space for its transportation from Japan, states the Japan Trade Bulletin. Its place is being taken by coal supplied from Canada. In 1917 Hawaii imported 49,995 tons of coal, exclusive of the requirement of the army and navy, according to the report of the Japanese Consul General stationed there. This figure represents a decrease of 37,944 tons over the figure of 1916. Most of the coal imported into Honolulu in 1916 was of Japanese production. Australia sent some coal, but supplied only about 7,000 tons of the 87,939 tons used in the Islands. During the year 1917 not only the Japanese coal but the Australian product also was practically withheld from the market.



The Massey-Harris Company's Twenty Thousand Dollar Cafeteria

A Notable Experiment in Welfare Work

President Findley of the Massey-Harris Co. Expresses Entire Satisfaction With the Results of Recent Work Along Welfare Lines in the Big Toronto Plant and Says that the Employees Appreciate it to an Extent that has Surprised Him

By WILLIAM LEWIS EDMONDS

WELFARE work in connection with the manufacturing industries of the Dominion is gradually becoming more general in practice, and during the past three or four years its development has been particularly marked. In explanation of this two reasons may be advanced. One relates to the increasing sympathy of employers in the general welfare of their employees. The other to a change in the attitude of employees towards such undertakings.

Until within recent years the general opinion obtaining among employers was that their duty towards their employees ended with the payment of a fair wage. Possibly some of them were actuated by selfish reasons in coming to this conclusion. But that which was the principal deterring factor among the great majority of employers was the opinion that welfare work savoured of patronage, and as such would be resented by employees of independent spirit. That there was reason for this latter view there can be no doubt. Furthermore it was learned by experience that employees only too often looked upon welfare work in their behalf as a subtle method of depriving them of as large a wage as they were entitled to. In other words, they were of opinion that indirectly they were providing the money with which to "pay the piper."

"Welfare work be damned," was too often in effect what they said. "Give us more money and we'll look after our own welfare."

Prejudices Being Dissipated

To-day as a result of the better understanding which is developing between employers and employees, prejudices and preconceived notions which formerly so generally obtained are gradually being dissipated, thus making the introduction of welfare work easier.

Among the most recent of the manufacturing firms in Canada to embark upon an ambitious scheme of welfare work for the benefit of their employees is the Massey-Harris Co.,

Limited, of Toronto. It is not, strictly speaking, the company's first venture in welfare work, a fund, derived from dividends on certain shares donated by Mr. Chester Massey and the late Walter Massey, having been created some years ago for the specific purpose of rendering assistance to needy workmen. This fund is a permanent institution.

The new scheme of welfare work upon which the company has embarked is comprehensive in its conception and widespread in its effects, embracing as it does a reduction in the hours of labor, accommodation for meals, provision of first aid, a new departure in the remuneration of foremen, and the cultivation of garden plots.

Reduction in Working Hours

To manufacturers the reduction in the hours of labor is probably the most interesting. For some years the regular working day for the employees of the company was ten hours. The management, without any representations being made by the workmen, came to the conclusion that, in view of modern conditions, this was excessive. It therefore proposed, without an accompanying reduction in wages, to reduce the working day to nine hours. Before putting this proposal in operation it was, however, decided, through the medium of the superintendents and foremen, to consult the men on the subject with the hope of so stimulating them that factory output would be maintained at the same ratio under the proposed nine-hour as under the ten-hour day.

Since the inauguration of the nine-hour day about three months have elapsed, and the results have been eminently satisfactory. From the very first week to the present the output of the factory has been maintained at the ratio obtaining under the ten-hour day. Even men on piece-work, who before the shorter day was put in operation were informed that no reduction would be made in their rate should they, by increasing their efforts, earn more money, have demonstrated that they were able to do so.



The New First Aid Department at the Massey-Harris Plant

Whether the venture will be permanently successful as far as the company's interests are concerned remains of course to be seen. But one thing the three months' experience has demonstrated is that it is possible, by securing the sympathetic co-operation of the work people, to obtain a factory output under a nine-hour day equal to that formerly secured when ten hours was the rule. It is also equally certain that without this sympathetic co-operation on the part of the men that its attainment is scarcely possible. It would, therefore, seem that the success of a venture in the reduction of the hours of labor as far as the employer is concerned largely depends upon the quality of leadership—leadership as represented in both the management and in the workmen, and particularly in that of the former.

The company's undertaking in regard to the foremen in connection with the plant is the placing them on the salary instead of on the wage list as formerly, thus permitting them to draw pay for holidays as well as ordinary working days.

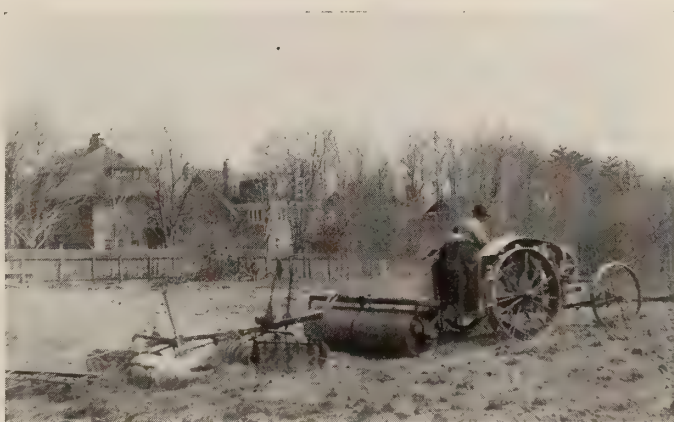
For some time Mr. Thomas Findley, the president of the company, had in contemplation the erection of a clubhouse for the use of the employees. The conditions created by the outbreak of the war, for the time being put a crimp in this idea. But the deferring of this led Mr. Findley a few months ago to conceive the idea of establishing a cafeteria in connection with the plant at which the work people could secure meals at a moderate charge. The suggestion met with the unanimous approval of the board of directors, and the ground floor of the large concrete building, formerly used in connection with the manufacturing of munitions, was fitted up as a cafeteria, at a cost of nearly twenty thousand dollars. The fittings and equipment are of the most modern description. The serving counter is of marble, with nickel fittings. The shelving is of plate glass. The chairs are of the regular cafeteria type, with one arm designed to serve as a table. Seating accommodation is provided for nearly five hundred

people. The kitchen is equipped with the most modern labor-saving appliances for cooking and dishwashing. In area the floor of the cafeteria is nearly one hundred feet square. Regular course dinners are put on for those who desire them, and the charges are merely sufficient to cover actual cost. The fact that they run from 40 to 60 per cent. below those obtaining in the ordinary restaurants which workmen frequent is proof of this. As the men finish their meal they read their papers, smoke their pipes, play checkers, cards or dominoes, or sit around in groups and discuss affairs until the factory whistles call them back to work.

The cafeteria was a success from the start, which was made about three months ago. The fact that the men appreciated the venture is evident not only from the patronage they give it, but from the fact that they have created a substantial fund for supplying the dining hall with plants and flowers. Still further evidence is the request which they made a few weeks after the cafeteria was opened that breakfast, as well as dinner, might be served. This request was favorably entertained, and a full course breakfast is now obtainable at the modest sum of twenty-five cents. The management is reposed in a committee of six, three of which represent the company and three the men. This is a wise provision, tending as it does to allay any suspicion that might possibly develop regarding profits that may accrue to

the venture. One interesting feature in connection with the cafeteria is the fact that those who take their meals there are not confined to the men from the factory. The office staff patronize it as well. So do the executive heads of the company. The result of this intermingling is the development of a spirit of comradeship to an extent formerly impossible.

Prior to the inauguration of the present welfare undertaking the first aid work in connection with the plant was in the hands of the fire brigade which the com-



Breaking Land for Employees' Garden Plots

pany kept continuously on duty. Now the work is in the charge of a trained nurse who is on duty from morning till night. The department over which she presides is equipped with modern appliances for first aid work. In all about forty cases a day are treated. A very small proportion of these, however, are accident cases. Most of the work is devoted to the treatment of minor complaints among the employees. Besides the room set apart for first aid work, another is equipped with modern appliances for the performance of operations which, through serious accidents, may be immediately necessary with a view to saving the life of the patient.

Industrial Gardens

In order to encourage gardening among its employees the company recently purchased thirteen acres of land at the corner of St. Clair Avenue and Spadina Road. This land was ploughed by one of the company's tractors and divided into 125 garden plots, all of which have been put under cultivation by the employees to whom they were allotted. For the convenience of the employees a tool house has also been erected. As a result of the enthusiasm with which the men have taken to gardening, it is the intention of the company to purchase additional lots in other parts of Toronto for the convenience of employees residing too far distant to avail themselves of the present site.

"From the experience you have had in welfare work would you recommend manufacturers who have not yet embarked upon it to do so?" I asked President Findley.

"I certainly would," he replied with some enthusiasm.

"Do the employees appreciate it?"

"Yes. At any rate, ours do, and to an extent that has rather surprised me. I am firmly of the opinion that it is a work that every manufacturer should undertake."

"Have you any recommendation to make as to methods of inaugurating welfare work among factory employees?"

"Yes. Briefly, it is this: The employer should set aside a certain percentage of his profits for the purpose of financing the undertaking and take his men into his confidence."

New Desiccating Plant

Factory of Graham's, Limited, at Belleville Has Been Rebuilt and is Now Operating to Capacity

The new vegetable desiccating plant of Graham's, Limited, at Belleville, which replaces the plant destroyed by fire in the spring of 1917, is now in full operation. The new factory is so arranged that the maximum of economy is secured by eliminating wasted motion and effort. Labor-saving devices, many of them the invention of the staff of Graham's, Limited, ensure the greatest output with the least number of operatives. The building is of fireproof construction throughout.

The main building is divided into two sections. The section facing Front Street is 52 by 87 feet ground space and is three storeys in height, in addition to a capacious and well-lighted basement. In this section are located the head offices of the company and the cold storage plant.

The cold storage department consists of twelve rooms 20 by 40 feet, but with accommodation below for the freezing and power plants. Eight of the rooms are maintained at or close to the freezing point. The other four are known as "sharp freezers." That is, they are held at a low temperature in order to freeze meat and similar products and held at always well below 32 degrees. The rooms with the moderate temperature are to be used for the storage of fruits, vegetables, eggs, etc., that are to be held at as low a temperature as possible without actually freezing. The "sharp freezers" are

for holding fresh meats and similar perishable products, not injured by freezing, for an indefinite period.

The assembling and packing plant fronts on Pinnacle Street. It is likewise of fireproof construction, with two storeys and a basement. The building is 121 by 154 feet. It is constructed so as to ensure the operatives the most wholesome conditions under which to work. Great windows occupy almost the entire wall space. The ceilings are high and the air circulation constant and ample.

The capacity of the main packing plant is four cars a day of desiccated products. The next largest Canadian rival, located in British Columbia, has a capacity of one carload a week.

Loading platforms of concrete form a convenient, clean and durable medium for handling the goods to and from the cars. Two sidings lead into the plant from the Pinnacle Street line of the Grand Trunk. On the sidings, which are also laid in concrete, there is accommodation for seven cars.

The staff is now working at high tension to fill a huge order for the American Government. When that is finished, another immense order for the French Government is waiting to be filled. This is the first business from the French Government in two years.

At present there are four desiccating plants operating in Ontario, three in New York, two in British Columbia, and one in New Brunswick. Those in Nova Scotia have just closed the season of drying the large surplus of apples.

New Type of Factory

By Setting the Columns Back, Possible to Obtain Continuous Stretch of Glass for Walls

A new form of factory building has recently been coming into use, in which the columns are set back from the walls. The purpose of this is to give a continuous stretch of glass for the walls of the building which will admit considerably more light than the normal construction in which the column forms part of the wall. The floors of the building are supported either on brackets or else they have a cantilever projection beyond the columns. A good example of this construction is found in a seven-story and basement structure built in Chicago last year. The floors project six inches beyond the outer line of the columns, giving a clearance of three inches between the column and the glass. For architectural purposes the columns at the corners and those next to the corners are built flush with the walls. As a result of this construction not only is there a considerable increase in the amount of light introduced within the building, but the ventilating surface is increased over twenty per cent.—*Scientific American*.

How the Germans Get Trade

According to the *Continental Press*, the Germans have taken advantage of the war to develop the Polish market for their goods. Two years ago several chambers of commerce in East Germany, together with the Berlin chamber, combined to establish a joint bureau in Poland. This bureau now represents eighty-four trade bodies, and has opened show rooms in Warsaw, Lodz, Kalisz, Chencstochow, Sosnowice and elsewhere. It negotiates the purchase and sale of articles not subject to Government control, and finds suitable agents for firms when desired. It further aids in the introduction of German wares through exhibitions, both general and special, in which particular attention is given to the needs and tastes of the Polish people.

How a Sarnia Plant Cultivates Efficiency

Some of the Facilities Provided by the H. Mueller Manufacturing Company, Limited,
for the Welfare of Their Employees, Together With a Brief Review of the
Development of Welfare Work as an Essential Factory Practice

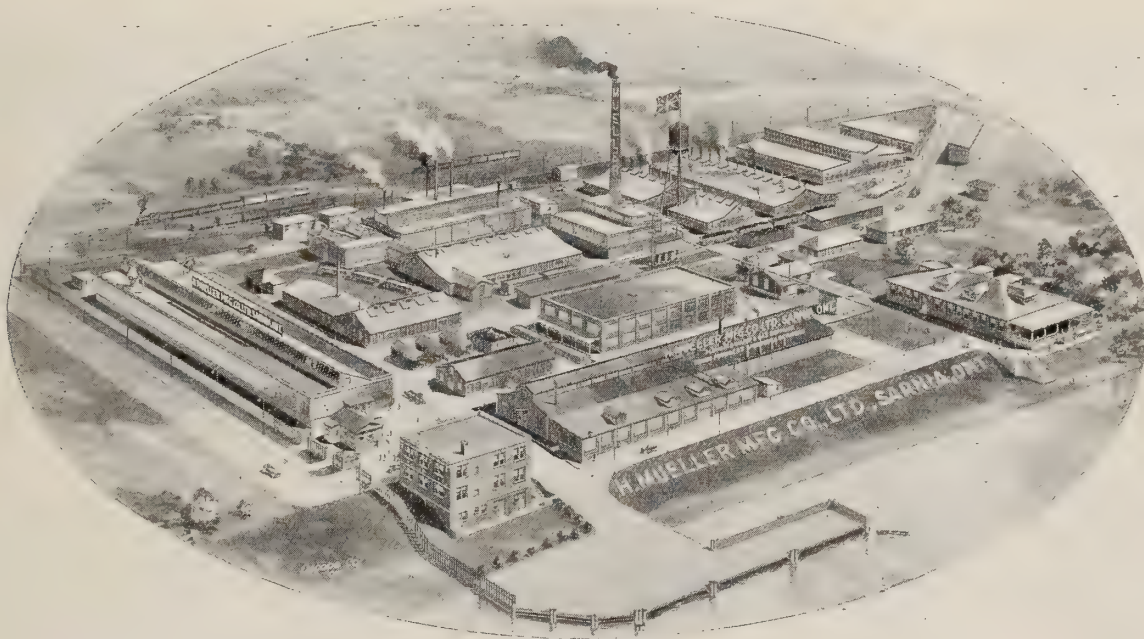
By J. H. MacMILLAN

CAST backwards a matter of a very few years and consider the working environment of the factory employee. In ninety-nine cases out of a hundred the employer had no interest in "Jim Smith" or "Mary Jones," other than procuring from them a day's work for a day's wages paid. Sanitation was practically confined to hospitals and the very word was suggestive of the doctor.

Slowly, but just as surely, the manufacturers have been brought to a realization that, in order to obtain one hundred

All this, and much more, has taken place to guard the physical welfare of our muscle-power.

Then the factory owner even went a step further. Based on the fact that a sick brain is only a small percentage efficient, means of recreation came into being—means to lift the mental power of the human unit away from the daily task, in order that the operating functions of that power should not become stagnant by being overfed with the monotony of the day's labor. Club rooms were furnished for the



Sarnia Plant of the H. Mueller Manufacturing Co., Limited

The Employees' Recreation Building referred to in this Article stands at the right hand side, overlooking the River

cents on the dollar paid to the employee, consideration had to be given to the mental and physical condition of the human unit of their organization.

Factory construction was the first item that showed the trend of affairs. Daylight buildings of concrete and steel and maximum of window space appeared. "Texas" and "Saw-Tooth" roofs put in an appearance. Where a board-walk alley had previously been considered sufficient for a passage-way between buildings, roadways of full width, cement paved, sprung into view. Hot and cold air systems for mechanically and automatically washing and freshening the atmosphere were added. Sanitary drinking fountains displaced the old germ-laden, community drinking cup and dust-laden water barrels. Individual towels, laundered by the company, relegated the "wipe" or roller towel to the background, and light, airy toilet rooms took the place of the disreputable, foul-odored corners that housed the sanitation facilities (?) of the manufactory of not so long ago. Doctors are employed and paid for by the company, to regularly examine those whose duties entail the slightest opportunity for contracting a disorder.

men and women, and from them have grown the spacious rest and recreation buildings that to-day provide the human element of an organization with mental stimulus to render 100 per cent. efficiency to the daily task. All of this is based on the old proverb of "all work and no play," etc.

When you stop to consider that the average employee spends a good deal more time at work than he does at play and at home combined—if you deduct the sleeping hours—it is not any more than fair that his place of employment should be as pleasant as possible.

For many years the various factories and branches of the H. Mueller Mfg. Co., Ltd., manufacturers of water, plumbing and gas brass goods, and castings and forgings in brass, bronze and aluminum, have been carrying out these ideas. To say they are costly is to falsify. The results that accrue more than equalize and justify the cost and upkeep of the institution.

The illustrations presented herewith show, conclusively, the lengths to which the Mueller Company have gone in their Sarnia plant. The plants at Port Huron, Michigan and Decatur, Illinois, are equipped likewise. The consensus of the

Mueller employees' opinions is the proof conclusive as to the success of welfare work. This work has a moral effect that is alone worth the value of the investment.

The Mueller Company employees have several internal associations, officered and operated by the employees themselves—Foremen's clubs, departmental clubs, etc.; an employees' aid society, supported by nominal fees, disburses sick, accident and death benefits. The Company itself is back of and supports, both morally and monetarily, any meritorious welfare movement that is advanced. Hot tea and coffee is served gratis to each employee at meal times in the recreation building, and music is provided and dancing permitted following the meal. Prizes are continually offered for effort along various lines and co-operation rules in every angle of the big organization.

The writer of this article remembers, some twenty-five years ago, working in a broom factory for one dollar per week. That factory was one of the largest in the business at the time. Every available foot of space was crammed with material and stock at all times. Daylight was at a premium and fresh air almost unknown. We had a clean-up day every

second week for which we didn't get paid—Sunday morning. Anybody caught sweeping the floor around his bench, at any other time, was fired—with a capital "F." Sometimes the refuse from the broom corn (partially decayed field mice, etc., included), was knee high at my bench—I was a "hurl cutter." More than once my stomach revolted. We were positively not allowed to leave our benches except when the whistle blew. Slave-driving methods constituted the efficiency of those days. When we contrast conditions such as they were with the modern factory of to-day, we can be excused from wondering how the worker stood his job under the conditions of not so long ago.

There are numerous industries of to-day that have not as yet "seen the light," but they are few and far between. The average factory employee of to-day is the best-cared-for individual in the commercial world—and why not? The human unit is fundamentally necessary to the operation of any industry. We must oil and repair our steeds of steel and fabric; why should we neglect to apply the mental and moral lubricant to our muscle power?



Views in the H. Mueller Manufacturing Co.'s Employees' Recreation Building

New Interswitching Order Goes Into Effect

The Many Complaints Which Have Been Made in the Past Five or Six Years Against the Regulations Now in Effect Are Cleared Up by the New Order Which Governs the Question of Interswitching Freight Traffic at Various Terminals

(Published by the Transportation Department)

A VERY important Order has just been issued by the Board of Railway Commissioners governing the question of interswitching freight traffic at various terminals.

This Order is known as General Order No. 230, and requires that the railway companies publish the new regulations prescribed therein in tariff form, effective July 1st, 1918. This Order rescinds Order No. 4988 (General Order No. 11), dated July 8th, 1908, which prescribed the interswitching regulations now in effect. The many complaints which have been made in the past five or six years against the regulations now in effect are cleared up by the new Order.

The Board of Railway Commissioners for Canada

Sir Henry L. Drayton, K.C., Chief Commissioner.
D'Arcy Scott, Asst. Chief Commissioner.
S. J. McLean, Commissioner.
A. S. Goodeve, Commissioner.

Dated at Ottawa this 17th day of May, 1918.

IN THE MATTER OF THE INTERSWITCHING OF FREIGHT TRAFFIC.

Under the authority conferred upon it by the Railway Act, the Board hereby rescinds its Order No. 4988 (General Order No. 11), dated the 8th day of July, 1908, and doth order and declare as follows:

1. For the interpretation, application and operation of this Order—

(a) "Interswitching" means the movement of freight in cars between the unloading or loading tracks of one carrier, hereinafter called the "terminal carrier," and the point of interchange with another carrier by whom, singly or jointly with a further carrier, the said traffic has been carried from its point of shipment or is to be carried to its destination, hereinafter called, singly or jointly, the "line carrier," both the terminal carrier and the line carrier which interchanges with the terminal carrier being subject to the jurisdiction of the Board; the said movement being performed with or without the aid of an intermediate carrier whether subject or not subject to the jurisdiction of the Board, hereinafter called the "intermediary."

(b) The "interchange" means the junction between the terminal carrier and the line carrier, or between the terminal carrier and the intermediary, nearest to the point of loading or unloading of the car.

2. This Order does not apply—

(a) To tracks used by the terminal carrier for the transfer of freight between cars and its freight warehouse, or for the purpose of trans-shipment from car to car, nor to tracks otherwise set apart for its own working purposes, except team tracks;

(b) To joint movements which both begin and end in the same terminal or group of terminals or adjoining switching districts;

(c) To cars which, having been once properly interswitched for unloading, are reconsigned for unloading elsewhere within the same terminal or group of terminals.

3. Subject to the provisions of section 14, carriers shall, at all times, according to their powers, furnish an interswitching service equal to the service accorded their own traffic at all points where interswitching facilities are, or may hereafter

be, provided, under the circumstances and at the tolls herein prescribed;

Provided that no terminal carrier or intermediary shall be obliged hereunder to make any movement exceeding the distances herein specified at the tolls herein prescribed, and that the said distances be irrespective of the location of the interchange and of yard limits or boundaries.

4. The toll of an intermediary subject to the jurisdiction of the Board shall not exceed, irrespective of weight, three dollars per car for any distance within and including three miles, or three dollars and fifty cents per car for any distance exceeding three miles to and including four miles.

5. If the traffic is loaded or unloaded upon private sidings connecting with the railway of the terminal carrier, or directly from or into an industry, elevator or yard abutting upon its tracks (commonly known as industrial sidings), or in any public stock yard, the toll of the terminal carrier shall not exceed one cent per 100 lbs. for the actual weight thereof, subject to the minimum weight of the line carrier's tariff, for any distance within and including four miles from the interchange; except that the terminal carrier shall be entitled to a minimum charge of three dollars per carload of traffic included in the 7th, 8th and 10th classes of the Canadian Freight Classification, and five dollars per carload of all other traffic.

6. The toll of the terminal carrier upon all traffic other than that referred to in section 5, including traffic to or from team tracks, shall not exceed two cents per 100 lbs. for the actual weight thereof, subject to the minimum weight of the line carrier's tariff, for any distance within and including four miles from the interchange; except that the terminal carrier shall be entitled to a minimum charge of six dollars per car.

7. Not less than the following proportions of the tolls herein prescribed shall be absorbed in the rate of the line carrier and the remainder shall be an addition thereto:

(a) One-half of the tolls charged by the terminal carrier under section 5 as qualified by section 9.

(b) Of the tolls prescribed in section 6 one-half of the tolls permitted under section 5, as qualified by section 9, as if the movement were to or from private sidings.

(c) One-half of the herein prescribed or lower tolls of each intermediary, if any, whether subject or not subject to the jurisdiction of the Board.

Provided that the line carrier may, unless its tariff rate is lower, charge and collect twelve dollars per car for its haul between the interchange and the point of shipment or destination when by reason of such absorption its line charges would otherwise be less than that amount.

8. The appropriate tolls hereinbefore prescribed shall not be exceeded, for the distances herein specified, in each direction, for the movement from and the return to the line carrier of so-called off-line transit traffic, and the line carrier shall be subject to the absorption provisions of section 7 only when its through rates are the sum of its published rates to and from the stop-over point.

9. If an extra car, commonly known as an idler, is used solely to take care of an overhang of long articles loaded on

an open car, it shall be charged by the terminal carrier not more than two-thirds of the herein prescribed appropriate toll for the minimum weight of the line carrier's tariff, except that the terminal carrier shall be entitled to a minimum charge of three dollars per car. If interposed between two cars in the same shipment to protect an overhang from each the idler shall be charged for once only.

10. No charge shall be made for the accessory interswitching of the empty car. If the car is loaded in both directions the interswitching toll shall be charged for each movement.

11. Subject to the provisions of section 14, nothing herein contained shall prevent the line carrier from absorbing the entire toll or tolls charged for interswitching competitive traffic, provided that the traffic and movements so treated are clearly defined in its tariffs.

12. Traffic to or from the United States shall be subject to the provisions of this Order at the point of shipment or destination in Canada.

13. If an exceptional rate is published to apply to or from the tracks of the carrier line only, the ordinary rate which includes the right of interswitching shall be plainly indicated in the same schedule, and the latter rate shall not exceed the former by more than the appropriate toll herein prescribed for the interswitching service.

14. Except as hereinafter provided, the tolls herein prescribed shall not apply to deprive the initial carrier of the line haul by a reasonable route of traffic loaded or to be loaded on its railway, including sidings connecting therewith, provided it furnishes at the destination, itself or through its connections or by interswitching, the same delivery and facilities as the competing carrier at no greater charge.

If a car is expressly ordered by the shipper to be inter-switched to another railway, notwithstanding that the initial carrier can furnish the services as above provided, the said initial carrier may, in lieu of the tolls otherwise prescribed herein, charge and collect its ordinary published tariff rate to the interchange, which rate shall be an additional charge against the shipment;

Provided, however, that if the said initial carrier fail or neglect to furnish the shipper with a car within forty-eight hours after it has been requested, or should through movement by the route of the initial carrier be embargoed, the shipper may require the initial carrier to accept and place, and the said carrier shall so accept and place, an empty car of any other carrier, in which case the movement of the empty car in and the loaded car out shall be effected under the provisions of sections 10 and 5 or 6, as the case may be.

The schedule to give effect to this Order shall be published and filed to come into force on the first day of July, 1918.

(Sgd.) H. L. DRAYTON, *Chief Commissioner*,
Board of Railway Commissioners for Canada.

BOARD OF RAILWAY COMMISSIONERS FOR CANADA.

Examined and certified as a true copy under section 23 of
"The Railway Act."

(Sgd.) A. D. CARTWRIGHT, *Secretary*,
Board of Railway Commissioners for Canada.

OTTAWA, May 18, 1918.

Although the Board approaches the question from a standpoint of public interest, treating the interswitching service as a joint movement as contended for by the Association, the Order, however, takes away from the shipper the right to route his freight in that it provides that the tolls prescribed shall not apply to deprive the initial carrier of the line haul on traffic routed or to be routed on its railway, including sidings

connected therewith, provided that the route is reasonable and that it furnishes at the destination itself, or through its connections or by interswitching, the same delivery and facilities as the competing carrier at no greater charge.

Japs Will Build Ships

The N.Y.K. Line Will Add Fifty Vessels at Cost of \$150,000,000 to Its Fleet

According to the *South China Mail*, the capital of the Nippon Yusen Kaisha is to be increased from \$22,000,000 to \$50,000,000, an advance of \$28,000,000. A further announcement is that the company will build fifty more ships at a cost of \$150,000,000. This ambitious programme on the part of Japan's premier steamship organization has, it is understood, been under consideration for many months and the results of a full investigation were to be submitted for final approval to a general meeting of the shareholders.

The increase of capital by \$28,000,000 was definitely decided upon by the directors and was to have been fully paid up by the end of last month. There appears to be a difference between the shareholders, however, as to future plans. One factor in the situation is said to be the existence of an influential group of stockholders, mostly in Osaka and Kobe, which is dissatisfied with the general business policy of Baron Rempei Kondo, the president, whom they say is too highly conservative to head such a firm.

These shareholders are now understood to be waging a fight against Baron Kondo and other directors of the company, requesting all their resignations. The stockholders have formed an association called the N. Y. K. Stockholders' Reformed League with a view to accomplishing their objects.

With regard to the future expansion of the company, two important plans have been projected by the authorities. One of these is to build a number of passenger liners of large size and high speed, such as those previously owned by the Hamburg-American Line and the North German Lloyd, while another plan calls for the building of fifty cargo ships. Considering the fact that it is impossible to predict regarding the future of the international passenger traffic, particularly on those services radiating from Japan to the United States and Great Britain after the war, and also for the extraordinarily high price of materials needed to equip the liners, it was decided by the board of directors to build only fifty cargo ships, aggregating 400,000 gross tons.

As soon as approval is obtained at the general meeting from the stockholders, the company will at once start to work on these post-bellum expansion plans. Most of the ships will be built at the Mitsubishi Engine & Dockyard in Nagasaki, and other leading shipbuilding firms will be requested to assist in the construction. Although the plan of building a number of large passenger liners is now suspended, it is to be revived as soon as the war is over, the Nippon Yusen Kaisha being anxious to engage in passenger traffic on a larger scale than now.

The plan of the wider passenger traffic trade is strongly advanced by such an influential man as M. Kato, for many years vice-president and managing-director, and now on the advisory board of the company. Considering the after-the-war trade, Mr. Kato strongly advised the inauguration of a direct line between Japan and Germany, by way of Italy. As soon as these fifty ships are completed the Nippon Yusen Kaisha will establish several overseas lines besides reinforcing those lines already established. Among the new lines will be one between Vancouver and Hongkong, with Australia as its centre.

United States Export Conservation List

The Latest Revision of This List of Commodities, the Export of Which is Being Strictly Conserved by the United States on Account of the Limited Supply and the Needs of the Allies for the Successful Prosecution of the War

(From the "War Trade Board Journal")

BELOW is given the Export Conservation List of April 15, 1918, containing certain modifications of the Export Conservation List as at present in effect. These modifications are effective April 15, 1918. The attention of shippers is called to the fact that the commodities on the Export Conservation List are in many cases being strictly conserved on account of the limited supply and the needs of the United States and the Allies for the successful prosecution of the war. Before making purchases or sales for export or engaging freight space or tonnage for these commodities, shippers are advised to obtain licenses for their exportation.

It will be observed that certain items on the following list of conserved commodities have been referred to in a general way; for example, "Lac and all varieties thereof." In other parts of the list, for the convenience of the shipping public, certain of the better known lacs have been specified; for example, "Shellac" and "Gum lac." No at-

tempt has been made to list all the various kinds of lac, but the public will understand from the heading "Lac and all varieties thereof" that all lacs are covered by the list, although specific reference is not made to each kind. The same understanding applies to all other commodities on this list which have been covered by a general heading. The notations X-1, X-2, X-3, X-4, X-5, X-6 indicate the supplementary information forms to be used.

Shippers are reminded that all commodities covered by the Export Conservation List require individual licenses when shipped to all countries, including Canada and Newfoundland, except when specifically stated to the contrary in the list. They are also reminded that the collectors of customs have no authority to issue licenses even for small amounts of these commodities, and consequently individual licenses must be procured for all destinations.

Export Conservation List, April 15, 1918

A
Acetaldehyde.
Acetanilide.
Acetate of cellulose, X-2.
Acetates, all, X-2.
Acetic acid, X-2.
Acetic acid, glacial, X-2.
Acetic anhydride.
Acetone, X-2.
Acids, as follows:
Acetic, X-2.
Acetic, glacial, X-2.
Carbonic (phenol), and its derivatives, X-2.
Hydrocyanic, X-2.
Hydrofluoric.
Nitric and its salts, X-2.
Picric, X-2.
Phosphate, X-2.
Phosphoric, X-2.
Sulphuric, X-2.
Aeronautical instruments.
Aeronautical machines, their parts and accessories.
Alcohol, X-2.
Alcohol, wood, X-2.
Aloes.
Aluin.
Alloy steel, X-2.
Alloys containing tin, X-4.
Alloys, nickel, X-2.
Alloys, steel, X-2.
Alpaca, manufactures of, X-5.
Alpaca, raw.
Alum, X-2.
Alum, ammonia, X-2.
Alum, chrome, X-2.
Alum, ferric, X-2.
Alum, potash, X-2.
Alumina, sulphate of, X-2.
Aluminum and all articles containing 10 per cent. or more (in weight) of aluminum, X-2. (Individual licenses not required to Canada and Newfoundland.)
Amidoazobenzol, X-2.
Amidophenol.
(Paraamidophenol.)
Ammonia and its salts, X-2.
Ammonia alum, X-2.
Ammonia, anhydrous, X-2.
Ammonium bromide, X-2.
Ammonium carbonate, X-2.
Ammonium chloride, X-2.
Ammonium nitrate, X-2.
Ammonium sulphate, X-2.
Ammunition, X-2.
Amorphous phosphorus, X-2.

Anhydrous ammonia, X-2.
Aniline oil, X-2.
Aniline salts, X-2.
Anti-aircraft instruments, apparatus and accessories.
Antifriction metal, X-2.
Antimony, X-2.
Antimony, black, X-2.
Antimony ore, X-2.
Antimony, oxide of, X-2.
Antimony, salts, X-2.
Antimony, sulphate of, X-2.
Antimony, sulphide of, X-2.
Antiphlogistine.
Arms, X-2.
Arsenate of lead, X-2.
Arsenate of soda, X-2.
Arsenic and compounds thereof, X-2.
Asbestos.
Asbestos mill fibers, all grades.
Ash soda, X-2.
Ash staves, X-2.
Ash, wood, X-2.
Ashes, hardwood.
Antropine and belladonna, X-2.
Ax handles made from ash wood, birch wood, hickory wood, and oak wood, X-2.
Axle and other mineral oil greases.

B
Babbitt metal, X-4.
Backs, fat, X-1.
Bacon, X-1.
Bagging, vegetable fiber, except cotton bagging, X-2.
Bags, jute, X-2.
Bags, vegetable fiber, except cotton bags, X-2.
Balata.
Balls, naphthalene.
Balsam, copaiba.
Balsam tolu.
Band-saw blades.
Barium chlorate, X-2.
Barium, nitrate of.
Barium peroxide.
Barium, sulphate of (blanc fixe).
Bark, cinchona, and products, X-2.
Barley, X-1.
Barley flour, X-1.
Barley meal, X-1.
Bars, steel sheet, X-2.

Bean meal, soya, X-1.
Bean oil, soya, X-1.
Beans, X-1.
Beans, canned, X-1.
Beans, castor, X-2.
Beans, soya.
Beans, velvet, X-1.
Beef products (canned, preserved, and fresh), X-1.
Beet syrup, X-1.
Belladonna and atropine, X-2.
Belting leather, X-3.
Belting, leather, X-3.
Benzaldehyde, X-2.
Benzene (from coal tar), X-2.
Benzine (from petroleum).
Benzine oil.
Benzoate of soda, X-2.
Benzol and its derivatives.
Bichromate of potash, X-2.
Bichromate of soda, X-2.
Billets, steel, X-2.
Binder twine, X-2.
Binoculars.
Birch shooks, X-2.
Birch staves, X-2.
Birch wood, X-2.
Biscuits, X-1.
Bismuth salts.
Bisulphate of soda.
Bisulphite of soda.
Black antimony, X-2.
Black lead and articles manufactured therefrom, X-2.
Blades, saw (circular, hack, and band).
Blanc fixe (sulphate of barium).
Blast furnaces, open hearth.
Block tin, X-4.
Blooms, steel, X-2.
Bluestone (copper sulphate), X-2.
Blue vitriol, X-2.
Boiler plates and all other classes of iron and steel plates $\frac{1}{8}$ -inch thick and heavier and wider than 6 inches and circles over 6 inches diameter, whether plain or fabricated. This includes No. 11 U.S. gauge, but not No. 11 B.W. gauge, X-2.
Boiler tubes, X-2.
Boilers, marine.
Boilers, ship.
Bone flour.
Bone, ground.
Bone meal.
Bone meal.

Book paper.
Boring machines, horizontal and vertical.
Boring mills (vertical, all sizes).
Boring tubes (oil-well casing), X-2.
Bottle caps, tin, X-4.
Brass and all articles containing 10 per cent. or more (in weight) of brass, X-2. (Individual licenses not required to Canada and Newfoundland except for brass commodities listed below).
Brass pipes, X-2.
Brass plates, X-2.
Brass sheets, X-2.
Brass tubes, X-2.
Bread, X-1.
Brewers' grains.
Bromide of ammonia, X-2.
Bromide of potash, X-2.
Bromide of soda, X-2.
Bromine, X-2.
Bronze and articles manufactured therefrom, X-2.
Burlap, X-2.
Butter, X-1.
Butter, cocoa, X-1.
Butter, coconut, X-1.
Butter, peanut, X-1.
Butter substitutes, X-1.

C
Cable (iron and steel), consisting of 6 wires or more, X-2.
Cable, stud-link chain.
Cake, cottonseed, X-1.
Cake, oil, X-1.
Calcium nitrate, X-2.
Calipers.
Camel's hair, manufactures of, X-5.
Camel's hair, raw.
Camphors (camphor, eucalyptol, menthol, thymol), X-2.
Candy.
Cane syrup, X-1.
Canned beans, X-1.
Canned beef products, X-1.
Canned corn, X-1.
Canned, peas, X-1.
Canned salmon, X-1.
Canned tomatoes, X-1.
Canned tuna fish, X-1.
Cantharides, X-2.

Caps, bottle (tin), X-4.
 Carboic acid (phenol) and its derivatives, X-2.
 Carbon disulphide.
 Carbon electrodes, X-2.
 Carbon tetrachloride.
 Carbonate of ammonia, X-2.
 Carrier pigeons.
 Cars (railway, completely assembled and unassembled and parts thereof).
 Cashmere, manufactures of, X-5.
 Cashmere, raw.
 Casing, oil-well, X-2 (frequently described as "boring tubes").
 Cast-iron pipes, X-2.
 Castor beans, X-2.
 Castor oil, X-2.
 Castor oil, sulphonated, X-2.
 Cattle, X-1.
 Cattle manure.
 Caustic potash, X-2.
 Caustic soda, X-2.
 Cellulose, acetate of, X-2.
 Cereals, X-1.
 Cerium and articles containing cerium, X-2.
 Chain, stud-link, open-link.
 Charcoal.
 Chestnut extracts, X-2.
 Chestnut wood, X-2.
 China wood oil, X-2.
 Chlorate of barium, X-2.
 Chlorate of potash, X-2.
 Chlorate of soda, X-2.
 Chlorates, X-2.
 Chlorbenzol (monochlorbenzol), X-2.
 Chloride of ammonia, X-2.
 Chloride of tin, X-2.
 Chlorine, X-2.
 Chloroform.
 Chrome alum, X-2.
 Chromium, chemical compounds thereof and their products, X-2.
 Chromium ore and any metal or ferroalloy thereof, X-2.
 Chucks, lathe.
 Cinchona bark and products, X-2.
 Circular-saw blades.
 Citrate of potash, X-2.
 Clips, wooden and worsted.
 Cloves, oil of, X-2.
 Cocaine.
 Coal, X-6. (Individual licenses not required to Canada and Newfoundland.)
 Cobalt chemical compounds thereof, X-2.
 Cobalt ore and any metal or ferroalloy thereof, X-2.
 Cocoa leaves and products.
 Cocoa, butter, X-1.
 Coconut butter, X-1.
 Coconut oil, X-1.
 Codliver oil.
 Coffee, X-1.
 Coke, X-6. (Individual licenses not required to Canada and Newfoundland.)
 Collapsible tubes, tin, X-4.
 Compasses, ships'.
 Composition foil containing tin, X-4.
 Compound lard, X-1.
 Condensed milk (including powdered milk, evaporated milk, and preserved milk of all kinds), X-1.
 Condensers.
 Confectionery, including chocolate candy.
 Containers, empty (tin), X-4.
 Copaiba, balsam, X-2.
 Copper, as follows:
 Ingots, X-2.
 Rods, X-2.
 Scrap, X-2.
 Tools, X-2.
 Wire, X-2.
 All articles containing 10 per cent. or more (in weight) of copper, X-2. (Individual licenses not required to Canada and Newfoundland, except for copper commodities listed below.)
 Copper, chemical compounds thereof, X-2.
 Copper pipes, X-2.
 Copper plates, X-2.
 Copper sheets, X-2.

Copper tubes, X-2.
 Copper sulphate (bluestone), X-2.
 Copra, X-1.
 Copra oil, X-1.
 Corn, X-1.
 Corn, canned, X-1.
 Corn flour, X-1.
 Corn grits, X-1.
 Corn hominy, X-1.
 Corn (Indian samp), X-1.
 Corn (maize), X-1.
 Corn meal, X-1.
 Corn oil, X-1.
 Corn syrup, X-1.
 Cotton, Egyptian and sea-island.
 Cotton linters.
 Cottonseed, X-1.
 Cottonseed cake, X-1.
 Cottonseed meal, X-1.
 Cottonseed oil, X-1.
 Crackers, X-1.
 Crucibles, graphite, X-2.
 Crucibles, platinum.
 Crude oil.
 Cyanamide, X-2.
 Cyanide of potash, X-2.
 Cyanide of sodium, X-2.
 Cyanides (all), X-2.
 Cyanogen and derivatives, X-2.
 Cylinder oil.

D

Dental gold.
 Dental instruments.
 Dental platinum.
 Dental supplies.
 Dextrine.
 Diamonds, industrial, X-2.
 Diamonds and precious stones of all kinds.
 Digitalin, X-2.
 Digitalis and products.
 Dimethylaniline, X-2.
 Dimethyl ketone, X-2.
 Dinitrobenzol, X-2.
 (Metadinitrobenzol.)
 Dinitrochlorbenzol, X-2.
 Dinitrophenol, X-2.
 Diphenylamine, X-2.
 Disulphide of carbon.
 Double acid phosphate.
 Drilling machines, radial.
 Drills (carbon and high-speed twist).
 Drills, twist.
 Dry paste flour.
 Dyestuffs.

E

Egyptian cotton.
 Electrodes, carbon, X-2.
 Electrodes, graphite, X-2.
 Emery grain and flour, X-2.
 Emetine.
 Empty tin containers, X-4.
 Engine oil.
 Engines, marine.
 Epsom salts.
 Ergot, X-2.
 Ergotin, X-2.
 Ether.
 Ethylmethyl ketone, X-2.
 Eucalyptol, X-2.
 Evaporated milk, X-1.
 Explosives, X-2.
 Extract, quebracho, X-2.
 Extracts, chestnut, X-2.
 Extracts, sumac, X-2.

F

Farina, X-1.
 Fat backs, X-1.
 Feeds.
 Felts (paper makers'), X-5.
 Ferric alum, X-2.
 Ferrocium, X-2.
 Ferrochrome, X-2.
 Ferrocobalt, X-2.
 Ferrocyanide of potash, X-2.
 Ferromanganese, X-2.
 Ferromolybdenum, X-2.
 Ferrosilicon, X-2.
 Ferrotitanium, X-2.
 Ferrotungsten, X-2.
 Ferrouanium, X-2.
 Ferrovandium, X-2.
 Fertilizers, mixed.
 Fibers, all vegetable, except cotton, X-2.
 Fibers, products manufactured from vegetable fibers, except cotton, X-2.
 Fibers, asbestos mill, all grades.

Files (abrasive).
 Fir timber, X-2.
 Fireroom parts, marine.
 Fish, canned tuna, X-1.
 Flax, and all articles containing flax, which are manufactured in the United States, X-2.
 Flour, as follows:
 Barley, X-1.
 Bone.
 Corn, X-1.
 Dry paste.
 Emery, X-2.
 Rice, X-1.
 Rye, X-1.
 Wheat, X-1.
 Fluoride of soda.
 Fodders.
 Foil and composition foil containing tin, X-4.
 Formaldehyde.
 Fresh beef products, X-1.
 Fuel oils.
 Furnaces, open-hearth blast.
 Furnaces, steel.

G

Gas oil.
 Gasoline.
 Gauze, hospital and medical.
 Generators suitable for searchlights, X-2.
 German silver, X-2.
 Glacial acetic acid, X-2.
 Glass, optical.
 Glove, leather, calf and kip.
 Glove leather, horse.
 Glucose, X-1.
 Glycerine, X-2.
 Gold, manufactured, and articles containing gold.
 Gold, dental.
 Grains, as follows:
 Brewers'.
 Emery, X-2.
 Graphite, and articles manufactured therefrom, X-2.
 Greases, as follows:
 Axle and other mineral-oil greases.
 Grinders, internal, plain, and universal.
 Grits, corn, X-1.
 Ground bone.
 Ground lenses.
 Guaiac resin.
 Guano.
 Guayule.
 Gum lac, X-2.
 Gum opium and its products.
 Gutta-joolatong.
 Gutta-percha.
 Gutta-siak.

H

Hack-saw blades.
 Hair, as follows:
 Alpaca, manufactures of, X-5.
 Alpaca, raw.
 Camel's, manufactures of, X-5.
 Camel's, raw.
 Cashmere, manufactures of, X-5.
 Cashmere, raw.
 Mohair, manufactures of, X-5.
 Mohair, raw.
 And all similar hairs and their manufactures, wastes, by-products, rags, and clips of all the above.
 Horse, raw.
 Hams, X-1.
 Hand-lantern oil.
 Handles, axe, hoe, pick, rake, sledge, shovel, spade, made from ash wood, birch wood, hickory wood, and oak wood, X-2.
 Hardwood ashes, X-2.
 Harness leather.
 Hemp and products manufactured therefrom, X-2.
 Hides, X-3.
 High-speed steel, X-2.
 Hoe handles made from ash wood, birch wood, hickory wood, and oak wood, X-2.
 Hogs, X-1.
 Hominy, corn, X-1.
 Hospital gauze.
 Horse hair, raw.
 Horses. (Individual license not required to Canada and Newfoundland.)

Humus.
 Hydraulic presses.
 Hydrocyanic acid, X-2.
 Hydrofluoric acid.
 Hyoscine.
 Hyoscyamus.
 Hyposulphite of sodium, X-2.

I

Indian samp (corn), X-1.
 Industrial diamonds, X-2.
 Ingots, copper, X-2. (Individual licenses not required to Canada and Newfoundland.)
 Ingots, steel, X-2.
 Instruments, as follows:
 Aeronautical.
 Anti-aircraft.
 Dental.
 Oil-well drilling and accessories.
 Optical.
 Surgical.
 Invert sugar syrup.
 Iodine.
 Ipecac, X-2.
 Iridium, X-2.
 Iron, pig, X-2.
 Iron pipe, cast, X-2.
 Iron plates, including ship, boiler, tank, and all other classes of iron plates 1/8-inch thick and heavier and wider than 6 inches and circles over 6 inches diameter, whether plain or fabricated. This includes No. 11 U.S. gauge, but not No. 11 B.W. gauge, X-2.
 Iron, scrap, X-2.

J

Jalap.
 Jewelry.
 Jute, and products manufactured therefrom (including cloth bags, gunnies, twine, etc.), X-2.

K

Kerosene, oil.
 Ketone, ethylmethyl, X-2.
 Ketone, methylethyl, X-2.

L

Lac and all varieties thereof, X-2.
 Lacquers.
 Land plaster.
 Lantern oil.
 Lard, X-1.
 Lard compound, X-1.
 Lard, neutral, X-1.
 Lard substitutes, X-1.
 Lathes, all sizes.
 Lathe chucks.
 Lead, arsenate of, X-2.
 Leather, as follows:
 Belting leather, X-3.
 Glove leather, calf and kip.
 Glove leather, horse.
 Harness leather.
 Leather belting, X-3.
 Shearlings.
 Shoe leather, calf and kip.
 Shoe leather, finished side.
 Shoe leather, horse.
 Sole leather, X-3.
 Strap leather.
 Leaves, cocoa, and products.
 Lenses, ground and optical.
 Linen, X-2.
 Linseed meal, X-1.
 Linseed oil.
 Linters, cotton.
 Locomotives and parts thereof.
 Lubricating oils.
 Lumber, as follows:
 Ash wood, X-2.
 Birch wood, X-2.
 Chestnut wood, X-2.
 Fir timber, X-2.
 Mahogany wood, X-2.
 Oak wood, X-2.
 Plywood and veneer of all kinds.
 Quebracho wood, X-2.
 Spruce wood, X-2.
 Walnut wood, X-2.
 Yellow pine measuring 12 inches by 12 inches and larger size, or 25 feet long and longer, X-2.

M

Macaroni, X-1.
Machines, as follows:
Aeronautical, their parts and accessories.
Boring (horizontal and vertical).
Drilling (radial).
Milling, plain and universal (except hand millers).
Oil-well drilling and accessories.
Machine tools, as follows:
Grinders, internal, plain and universal.
Horizontal and vertical boring machines.
Lathes, all sizes.
Milling machines, plain and universal (except hand millers).
Planers.
Radial drilling machines.
Slotters.
Vertical boring mills, all sizes.
Magnesite.
Magnesium.
Magnesium, sulphate, X-2.
Mahogany, shooks, X-2.
Mahogany staves, X-2.
Mahogany wood, X-2.
Maize (corn), X-1.
Malt, X-1.
Malt sprouts.
Manganese, chemical compounds thereof, X-2.
Manganese ore and any metal or ferroalloy thereof, X-2.
Manganese oxide, X-2.
Manila fiber, and products manufactured therefrom, X-2.
Manure, cattle.
Manure, potato.
Manure, sheep.
Maple syrup, X-1.
Marine boilers.
Marine engines.
Marine fireroom parts.
Meal, as follows:
Barley, X-1.
Bone.
Corn, X-1.
Cottonseed, X-1.
Linseed, X-1.
Oilcake, X-1.
Peanut, X-1.
Rye, X-1.
Soya-bean, X-1.
Medical gauze.
Medicines, patent.
Menthol, X-2.
Mercury and its compounds, X-2.
Metal, as follows:
Antifriction, X-2.
Babbitt, X-4.
Type, X-2.
White, X-4.
Metallic potassium, X-2.
Metallic tin, X-4.
Methylethyl ketone, X-2.
Metadinitrobenzol, X-2.
(Dinitrobenzol.)
Mica.
Mica splittings.
Micrometers.
Milk, as follows:
Condensed, X-1.
Evaporated, X-1.
Powdered, X-1.
Preserved (all kinds), X-1.
Sugar of.
Mills, plate rolling.
Mineral grease.
Mineral oils.
Mirror iron (frequently described as "specular iron" and "spiegeleisen"), X-2.
Mixed fertilizers.
Mohair, manufactures of, X-5.
Mohair, raw.
Molasses, X-1.
Molybdenite, X-2.
Molybdenum, X-2.
Molybdenum, chemical compounds thereof, X-2.
Monazite, X-2.
Monochlorbenzol, X-2.
(Chlorbenzol.)
Morphine and derivatives, X-2.
Mules. (Individual licenses not required to Canada and Newfoundland.)
Mustard oils, X-2.

N

Naptha.
Naphthalene and its derivatives.
Naphthalene balls.
Neutral lard, X-1.
Newsprint paper.
Nickel and all articles containing 10 per cent or more (in weight) of nickel, X-2.
(Individual license not required to Canada and Newfoundland except for nickel commodities listed below.)
Nickel alloys, X-2.
Nickel, chemical compounds thereof.
Nitrates, as follows:
Ammonia, X-2.
Barium.
Calcium, X-2.
Potash, X-2.
Silver.
Soda, X-2.
Nitric acid and its salts, X-2.
Nitroacetanilide, X-2.
(Paranitroacetanilide.)
Nitroaniline, X-2.
Nitrobenzol, X-2.
Nitroresols.
Nitrochlorbenzol, X-2.
(Paranitrochlorbenzol.)
Nitronaphthalenes, X-2.
Nitrophenol, X-2.
(Paranitrophenol.)
Nitrotoluol, X-2.
(Orthonitrotoluol.)
(Paranitrotoluol.)
Nitrosodimethylaniline, X-2.
Nitroxyls, X-2.
Noils, worsted.
Noodles, X-1.
Novocain.
Nux vomica and products.

O

Oak shooks, X-2.
Oak staves, X-2.
Oak wood, X-2.
Oakum, X-2.
Oatmeal, X-1.
Oats, X-1.
Oats, products of, X-1.
Oats, rolled.
Oilcake, X-1.
Oilcake meal, X-1.
Oil of cloves, X-2.
Oil of santalwood, X-2.
Oil-well casing, X-2 (frequently described as "boring tubes").
Oil-well drilling implements, machinery and accessories.
Oils, as follows:
Aniline, X-2.
Axle and other mineral oil greases.
Benzine (from petroleum).
Castor, X-2.
Castor, sulphonated, X-2.
China wood, X-2.
Clove, X-2.
Cocoanut, X-1.
Codliver.
Copra, X-1.
Corn, X-1.
Cottonseed, X-1.
Crude.
Cylinder.
Engine.
Fuel.
Gas.
Gasoline.
Hand-lantern.
Kerosene.
Lantern.
Linseed.
Lubricating.
Mineral.
Mustard, X-2.
Naptha.
Olive, X-1.
Palm, X-1.
Paraffin.
Peanut, X-1.
Petroleum.
Rapeseed, X-1.
Santalwood, X-2.
Soya bean, X-1.
Oleomargarine, X-1.
Olive oil, X-1.
Open-hearth blast furnaces.
Open-link chain.
Opium gum and its products, X-2.
Optical glass.
Optical instruments.

Optical lenses.

Ore, as follows:
Antimony, X-2.
Chromium and any metal or ferroalloy thereof, X-2.
Cobalt and any metal or ferroalloy thereof, X-2.
Manganese and any metal or ferroalloy thereof, X-2.
Strontium, X-2.
Tin, X-4.
Tungsten and any metal or ferroalloy thereof, X-2.
Orthonitrotoluol, X-2.
(Nitrotoluol.)
(Paranitrotoluol.)
Orthotoluidine, X-2.
(Paratoluidine.)
(Toluidine.)
Oxide of antimony, X-2.
Oxide of manganese, X-2.

P

Palladium.
Palm oil, X-1.
Paper, as follows:
Book.
Newsprint.
Poster.
Print.
Papermakers' felts, X-5.
Paraamidophenol.
(Amidophenol.)
Paraffin.
Paraffin oils.
Paraffin wax.
Paranitraniline, X-2.
Paranitroacetanilide, X-2.
(Nitroacetanilide.)
Paranitrochlorbenzol, X-2.
(Nitrochlorbenzol.)
Paranitrophenol, X-2.
(Nitrophenol.)
Paranitrotoluol, X-2.
(Nitrotoluol.)
(Orthonitrotoluol.)
Paratoluidine, X-2.
(Toluidine.)
(Orthotoluidine.)
Paste soup, X-1.
Patent medicines.
Peanut butter, X-1.
Peanut meal, X-1.
Peanut oil, X-1.
Peas, X-1.
Peas, canned, X-1.
Peas, seed, X-1.
Permanganate of potash, X-2.
Peroxide of barium.
Petroleum.
Phenol (carbolic acid) and its derivatives, X-2.
Phenolphthalein, X-2.
Phosphate acid, X-2.
Phosphate of soda.
Phosphate, double acid.
Phosphides.
Phosphoric acid, X-2.
Phosphorized tin, X-4.
Phosphorus, X-2.
Phosphorus, amorphous, X-2.
Phosphorus, yellow, X-2.
Pick handles made from ash wood, birch wood, hickory wood, and oak wood, X-2.
Picric acid, X-2.
Pigeons, carrier.
Pig iron, X-2.
Pig tin, X-4.
Pilocarpine.
Pine, yellow, measuring 12 inches by 12 inches and larger size, or 25 feet long and longer, X-2.
Pipe, cast-iron, X-2.
Pipe, brass, X-2.
Pipes, copper, X-2.
Plaster, land.
Planers.
Plate,terne, X-4.
Plate, tin, X-4.
Plate rolling mills.
Plates, brass, X-2.
Plates, copper, X-2.
Plates, iron and steel, including ship, boiler, tank, and all other classes of iron and steel plates 1/8-inch thick and heavier and wider than 6 inches and circles over 6 inches diameter, whether plain or fabricated. This includes No. 11 U.S. gauge, but not No. 11 B.W. gauge, X-2.
Platinum and articles containing platinum.

Platinum, dental.

Plumbago and articles manufactured therefrom, X-2.
Plywood and veneer of all kinds.
Pork, X-1.
Pork products, X-1.
Postage stamps, cancelled and uncanceled.
Poster paper.
Potash, X-2.
Potash, as follows:
Alum, X-2.
Bromide of, X-2.
Bichromate of, X-2.
Caustic, X-2.
Chlorate of, X-2.
Citrate of, X-2.
Cyanide of, X-2.
Ferrocyanide, X-2.
Nitrate of, X-2.
Permanganate of, X-2.
Potassium and its compounds, X-2.
Potassium, metallic, X-2.
Potato manure.
Poudrette.
Powdered milk, X-1.
Precious stones of all kinds.
Preserved beef products, X-1.
Preserved milk of all kinds, X-1.
Presses, hydraulic.
Printers' type, X-4.
Print paper.
Proprietary compounds.
Prussiate of soda.
Pulled wool.
Pyrites.
Pyrometers, equipment and thermocouples.

Q

Quebracho extract, X-2.
Quebracho wood, X-2.
Quicksilver, X-2.
Quinine and its compounds, X-2.

R

Radial drilling machines.
Radio and wireless apparatus and all accessories, X-2.
Rags, woollen or worsted.
Railway cars completely assembled and unassembled and parts thereof.
Rake handles made from ash wood, birch wood, hickory wood, and oak wood, X-2.
Rapeseed oil, X-1.
Reamers.
Reclaimed rubber.
Reflectors, searchlight, X-2.
Resin, guaiac.
Rice, X-1.
Rice flour, X-1.
Rods, copper, X-2. (Individual licenses not required to Canada and Newfoundland.)
Rolled oats.
Rolling mills, plate.
Root, senega.
Rope, manila, X-2.
Rope, wire (iron and steel), consisting of 6 wires or more, X-2.
Rubber.
Rubber, articles manufactured therefrom. (Individual licenses not required to Canada and Newfoundland.)
Rubber, reclaimed.
Rubber, scrap.
Rye, X-1.
Rye flour, X-1.
Rye meal, X-1.

S

Saccharin, X-2.
Sal ammoniac, X-2.
Sal soda, X-2.
Salmon, canned, X-1.
Saltpeter, X-2.
Salts, as follows:
Ammonia, X-2.
Aniline, X-2.
Antimony, X-2.
Bismuth.
Epsom.
Nitric acid, X-2.
Sulphuric acid, X-2.
Samp, Indian (corn), X-1.
Santalwood, oil of, X-2.

- Saw blades, circular, hack, and band.
 Scammony.
 Scoured wool.
 Scrap, copper, X-2. (Individual licenses not required to Canada and Newfoundland.)
 Scrap iron and steel, X-2.
 Scrap rubber.
 Scrap tin, X-4.
 Sea-island cotton.
 Searchlights and parts thereof and generators therefor, X-2.
 Seed, sugar beet.
 Seed peas, X-1.
 Seedlac, X-2.
 Senega root.
 Sextants.
 Shearlings.
 Sheelite, X-2.
 Sheep, X-1.
 Sheep manure.
 Sheet bars, steel, X-2.
 Sheets, brass, X-2.
 Sheets, copper, X-2.
 Shellac, X-2.
 Ship boilers.
 Ship plates, iron and steel, and all other classes of iron and steel plates $\frac{1}{8}$ -inch thick and heavier and wider than 6 inches and circles over 6 inches diameter, whether plain or fabricated. This includes No. 11 U.S. gauge, but not No. 11 B.W. gauge, X-2.
 Ships' compasses.
 Shoe leather, calf and kip.
 Shoe leather, finished side.
 Shoe leather, horse.
 Shooks (oak, birch, mahogany, walnut), X-2.
 Shovel handles made from ash wood, birch wood, hickory wood, and oak wood, X-2.
 Silver, manufactured, and articles containing silver.
 Silver, German, X-2.
 Silver nitrate.
 Syrup, as follows:
 Beet, X-1.
 Cane, X-1.
 Corn, X-1.
 Invert sugar.
 Maple, X-1.
 Sisal and products manufactured therefrom, X-2.
 Skins.
 Slabs, steel, X-2.
 Sledge handles made from ash wood, birch wood, hickory wood, and oak wood, X-2.
 Slotters.
 Soda, as follows:
 Arsenate of, X-2.
 Bichromate of, X-2.
 Caustic, X-2.
 Nitrate of, X-2.
 Prussiate of.
 Sulphate of.
 Soda ash, X-2.
 Sodium.
 Sodium, as follows:
 Benzoate, X-2.
 Bisulphate.
 Bisulphite.
 Bromide, X-2.
 Chlorate, X-2.
 Cyanide, X-2.
 Fluoride.
 Hyposulphite, X-2.
 Phosphate.
 Sulphide, X-2.
 Sulphite, X-2.
 Solder, X-4.
 Sole leather, X-3.
 Soot.
 Soup paste, X-1.
 Soya bean meal, X-1.
 Soya bean oil, X-1.
 Soya beans.
 Spade handles made from ash wood, birch wood, hickory wood, and oak wood, X-2.
 Spaghetti, X-1.
 Spiegeleisen (frequently described as "specular iron" and "mirror iron"), X-2.
 Splittings, mica.
 Sprouts, malt.
 Spruce wood.
 Stamps, postage (cancelled and uncanceled).
 Staves (oak, ash, birch, mahogany, walnut), X-2.
 Steel, as follows:
 Alloy, X-2.
 Billets, X-2.
 Blooms, X-2.
 Boiler tubes, X-2.
 Files, abrasive.
 High-speed, X-2.
 Ingots, X-2.
 Oil-well casing, X-2 (frequently described as "boring tubes").
 Plates, including ship, boiler, tank, and all other classes of steel plates $\frac{1}{8}$ -inch thick and heavier and wider than 6 inches and circles over 6 inches diameter, whether plain or fabricated. This includes No. 11 U.S. gauge, but not No. 11 B.W. gauge, X-2.
 Scrap, X-2.
 Sheet bars, X-2.
 Slabs, X-2.
 Wire rope, cable, or strand consisting of 6 wires or more, X-2.
 Steel furnaces.
 Stones, precious, of all kinds.
 Strand (iron and steel) consisting of 6 wires or more, X-2.
 Strap leather.
 Strontium ores, X-2.
 Strophanthine.
 Strophanthus.
 Strychnine.
 Stud-link chain.
 Stud-link chain cable.
 Sugar, X-1.
 Sugar-beet seed.
 Sugar of milk.
 Sulphate of alumina, X-2.
 Sulphate of ammonia, X-2.
 Sulphate of antimony, X-2.
 Sulphate of barium (blanc fixe).
 Sulphate of copper (blue-stone), X-2.
 Sulphate of magnesium, X-2.
 Sulphate of soda.
 Sulphate of zinc.
 Sulphide of antimony, X-2.
 Sulphide of sodium, X-2.
 Sulphite of sodium, X-2.
 Sulphonated castor oil, X-2.
 Sulphur, X-2.
 Sulphuric acid, X-2.
 Sumac extracts, X-2.
 Superheaters.
 Superphosphate, X-2.
 Surgical instruments.
 Tachometers.
 Tankage.
 Tank plates, iron and steel, and all other classes of iron and steel plate $\frac{1}{8}$ -inch thick and heavier and wider than 6 inches and circles over 6 inches diameter, whether plain or fabricated. This includes No. 11 U.S. gauge, but not No. 11 B.W. gauge, X-2.
 Terne plate, X-4.
 Tetrachloride, carbon.
 Tetrachloride of tin, X-2.
 Tetrachlormethane.
 Tetranitroaniline.
 Tetranitromethylaniline, X-2.
 Tetranitroethylaniline, X-2.
 Thermo-couples for pyrometers.
 Thorium and articles containing thorium, X-2.
 Thymol, X-2.
 Timber, fir, X-2.
 Tin, as follows:
 Any metallic alloy containing tin, X-4.
 Block, X-4.
 Bottle caps, X-4.
 Chloride of, X-2.
 Collapsible tubes, X-4.
 Compounds of, X-2.
 Empty container, X-4.
 Foil and composition foil containing tin, X-4.
 Metallic, X-4.
 Ore, X-4.
 Phosphorized, X-4.
 Pig, X-4.
 Plate, X-4.
 Scrap, X-4.
 Tetrachloride, X-2.
 Titanium, X-2.
 Tolidin, X-2.
 Toluene, X-2.
 Toluidine, X-2.
 (Orthotoluidine.)
 (Paratoluidine.)
 Tolu, balsam.
 Toluol, X-2.
 Toluol derivatives, X-2.
 Tomatoes, canned, X-1.
 Tools, copper, X-2. (Individual licenses not required to Canada and Newfoundland.)
 Tops, worsted.
 Trinitrophenol, X-2.
 Trinitrotoluol, X-2.
 Tubes, boiler, X-2.
 Tubes, boring (oil-well casing), X-2.
 Tubes, brass, X-2.
 Tubes, collapsible (tin), X-4.
 Tubes, copper, X-2.
 Tuna fish, canned, X-1.
 Tungsten, any chemical compound thereof, X-2.
 Tungsten ore and any metal or ferroalloy thereof, X-2.
 Turbines.
 Twine, binder, X-2.
 Twist drills.
 Type metal, X-2.
 Type, printers', X-4.
 Uranium, X-2.
 Vanadium, X-2.
 Vanillin.
 Varnish.
 Vegetable fibers, except cotton, X-2.
 Vegetable fibers, products manufactured therefrom, except cotton, X-2.
 Velvet beans, X-1.
 Veneer and plywood of all kinds.
 Veratrin.
 Vermicelli, X-1.
 Vertical boring machines.
 Vertical boring mills (all sizes).
 Vitriol, blue, X-2.
 Walnut shooks, X-2.
 Walnut wood, X-2.
 Waste, woollen.
 Waste, worsted.
 Wax, paraffin.
 Wheat, X-1.
 Wheat flour, X-1.
 Wheat, products of, X-1.
 White metal, X-4.
 White zinc (dry).
 Wire, copper, X-2. (Individual licenses not required to Canada and Newfoundland.)
 Wire rope, cable or strand (iron and steel), consisting of 6 wires or more, X-2.
 Wireless and radio apparatus and all accessories, X-2.
 Wolframite, X-2.
 Wood, as follows:
 Ash, X-2.
 Birch, X-2.
 Chestnut, X-2.
 Fir timber, X-2.
 Mahogany, X-2.
 Oak, X-2.
 Quebracho, X-2.
 Spruce.
 Veneer and plywood of all kinds.
 Walnut, X-2.
 Yellow pine, measuring 12 inches by 12 inches, and larger size, or 25 feet long and longer, X-2.
 Wood alcohol, X-2.
 Wool, as follows:
 In the grease.
 Pulled.
 Scoured.
 Wool, manufactures of, X-5.
 Woollen by-products.
 Woollen clips.
 Woollen rags.
 Woollen waste.
 Woollen yarns.
 Worsted by-products.
 Worsted clips.
 Worsted, manufactures of, X-5.
 Worsted noils.
 Worsted rags.
 Worsted tops.
 Worsted waste.
 Worsted yarns.
 Yarns, woollen.
 Yarns, worsted.
 Yellow pine, measuring 12 inches by 12 inches and larger size, or 25 feet long and longer, X-2.
 Yellow phosphorus, X-2.
 Zinc and its compounds.
 Zinc sulphate.
 Zinc, white (dry).

In connection with the publication of the foregoing list the following notice was given to the press on April 13, 1918:

Export Conservation List

The attention of shippers and others concerned is directed to the fact that there has been issued by the War Trade Board a revised Export Conservation List containing certain modifications of the Export Conservation List at present in effect. These modifications are effective April 15, 1918.

Particular attention is directed to the fact that in accordance with the provisions of this revised Export Conservation List individual export licenses will not be required on shipments to Canada and Newfoundland of the following commodities:

Aluminum and all articles containing aluminum.

Brass and all articles containing brass, excepting brass pipes, brass plates, brass sheets, brass tubes.

Copper and all articles containing copper, excepting copper pipes, copper plates, copper sheets, copper tubes, copper sulphate, chemical compounds of copper.

Nickel and all articles containing nickel, excepting chemical compounds thereof and nickel alloys.

Articles manufactured of rubber.

Addition to Export Conservation List

Since the above list was published radium has been added to the Export Conservation List. (W. T. B. R. 100.)

Hamilton Branch Holds Annual Meeting

Reports Presented Indicate Substantial Progress During Past Year—H. H. Champ Succeeds W. H. Marsh in the Chairmanship—Many Problems Are Dealt With in Reports and Speeches—Mr. Parsons Present

AT the annual meeting of the Hamilton Branch of the C.M.A., held on May 30, H. H. Champ was elected Chairman; George H. Douglas, Vice-Chairman; and H. E. Waterman, Secretary-Treasurer, for the ensuing year. The Executive Committee consists of Henry Bertram, J. A. McMahon, Cyrus A. Birge, A. F. Hatch, W. B. Champ, H. P. Hubbard, R. Hobson, Geo. C. Coppley, W. R. Dunn and H. L. Frost, with H. H. Biggert, R. R. Moodie, H. J. Waddie and W. H. Marsh as ex-officio members.

The report of the Secretary-Treasurer, H. E. Waterman, showed nine new members, four resignations and a total membership of 213. A favorable financial statement was presented, it being shown that \$1,500 was invested in war loans.

The annual report of W. H. Marsh, the 1917-18 Chairman, was presented by the acting Chairman, H. H. Champ, in the absence, through illness, of Mr. Marsh. It dealt exhaustively with many phases of the industrial situation, and summarized admirably the activities of the year. Considerable attention was devoted to the subject of transportation, which was dealt with under the heads of car demurrage, pooling of equipment, rate increases and amendment to the Consolidated Railway Act. On the subject of technical education, Mr. Marsh said:

Technical Education

"Hamilton Branch is vitally interested in the proper development of technical education in the City of Hamilton, and has donated liberal prizes for the encouragement of the students of the Technical School. During the last two years the Technical School has made wonderful progress, both in the enrolment of pupils in day and evening classes and in the character of the training afforded in its shops and classrooms. The last report of the principal to the Technical Committee shows that over 1,200 pupils received instruction in this institution during the year 1917-1918.

"Employers of the city are beginning to realize that the Technical School is a part of the industrial life of the city. Apprentices from over twenty firms attend the school one half-day each week for instruction in subjects related to their trade. In fact, the development of part-time apprentice training in the Technical School is the most encouraging work of the kind on the continent.

"Early in 1917 the Technical Committee of the Board of Education recommended that steps be taken to erect new Technical School buildings on the six-acre site purchased a few years ago for this purpose. Unfortunately, some members of the Board of Education at that time counselled delay, on the ground of increased cost of construction. Later on, in 1917, a delegation from this Association and the Board of Trade waited upon the Board of Education and urged the construction of a new Technical School, but for some reason or other no attention was paid to our representations.

"The time has come for action in this matter. The war has made serious demands upon skilled labor in this country. Means must be taken speedily to replenish the supply of skilled workers, otherwise our industrial growth will be checked beyond repair. The Technical School is the training place for the skilled workers of the future. Its usefulness should not be impaired by lack of room, equipment or staff required to train the hundreds of boys who must be devel-

oped in skill of hand and brain to take the places of the workers who are fighting for the Empire overseas.

"At this time, when other nations are awakening to the necessity for increasing facilities for technical education, so that they will be prepared for industrial competition which is sure to follow the conclusion of hostilities, it is folly to put off the construction of buildings which are needed for this purpose in Hamilton.

Government Liberal

"The Ontario Government has been very liberal in its grants for the furtherance of technical education in this city. The entire cost of equipment and half the cost of teachers' salaries is paid for by the Government. Because of this aid, technical education is costing the taxpayers less than any other form of public instruction, and there is no reason why the community should not supply suitable and adequate accommodation for carrying on successfully the work now so well begun. There should be, I believe, no further delay in building the new Technical School."

Mr. Marsh also dealt with the returned soldier problem, the subject of farm help, electric power and natural gas.

Mr. Champ, the new Chairman, referred to the problems confronting the Association during the year. With regard to the employment of returned soldiers, he said that he felt there was not a manufacturer in Hamilton who did not desire to employ the returned men whenever possible.

Mr. Champ said in regard to the farm labor problem that he did not think it fair that manufacturers should be called upon to loan their employees to the farmers and pay the former the difference between the employee's regular wage and what the farmer would pay, stating that the farmer was at present receiving good prices for his produce. At the same time he urged every co-operation between the manufacturers and farmers, and said that in the event of a serious shortage the manufacturers should lend assistance in farm produce.

The Branch was honored with the presence at its annual meeting of S. R. Parsons, President of the General Association, who made an important address on problems with which the manufacturers of Canada will have to deal.

Many New Industries

With the brisk demand prevailing for all forms of manufactured products, many new industries continue to be attracted to Eastern Canada. Along the lines of the Grand Trunk Railway system the increase in the number of industrial plants has been very marked. More than forty large concerns have located on the railway in Ontario and Quebec during the past twelve months. These new plants represent a capital investment of nearly \$11,000,000, and will employ six thousand hands.

Extensive additions have also been made to existing plants. These extensions, at twelve representative points along the Grand Trunk, have called for an increase in the capital investment amounting to several millions of dollars, and the employment of some thousands of extra hands.

Little Aid for a B.C. Iron Industry

Chairman of the Delegation Tells the Victoria Rotary Club About the Experiences
of the Delegates at Ottawa, Where Not Much Hope Was Given that
Assistance from the Dominion Government Would
Be Forthcoming

(From the "Victoria Colonist")

MR. R. R. NEILD, secretary of the original Iron Committee of the Victoria, B.C., Rotary Club, and chairman of the delegation from the subsequent Central Iron Committee to Ottawa, reviewed the operations of the delegation to the meeting of the Rotary Club, held on May 16.

Mr. J. F. Bledsoe, a member of the delegation who returned from the Capital recently, also spoke. Both gentlemen laid stress on the difficulties that beset their mission to secure Dominion aid for the establishment of an iron industry in this province, but paid tribute separately to Vancouver Island's representatives in the House of Commons, Dr. S. F. Tolmie and Mr. J. C. McIntosh, who "were playing the game like big, broad men for the best interests of this province."

"We had a hunch at the second meeting with the members of the cabinet that the most we could expect from the Government was something in the nature of what they have given us," said Mr. Neild in summing up. "We kept it in the background. We had gone out there to get a bounty, and we were determined to leave no stone unturned. We are sorry we failed, but we did our best, and all the British Columbia representatives turned out to assist us."

Mr. Neild said that the delegation had gone to Ottawa fully alive to the fact that there would be an abundance of opposition. The first consideration was to get a line on all the favorite arguments of the objectors and the sources of them, that plans might be perfected to combat them. The plan had to be educational from the very foundation. Department heads were so vague about circumstances out on this coast as to insistently confuse Vancouver City with Vancouver Island. Of the members of the Dominion Cabinet, the Hon. A. K. MacLean had been found the most sympathetic.

Foundation Laid

Through Dr. Tolmie and Mr. McIntosh, the first meeting with the Hon. Martin Burrell was secured. It was necessarily short, and he asked for a brief to be presented to the Cabinet. During the interval of Mr. Burrell's absence from Ottawa in the following two weeks, the British Columbia delegates had met personally all the members of the Cabinet and most of the Western members of the House. The way was thus prepared for the moral support necessary to back up the claims of the delegation. The brief was prepared to show that the iron ores were here; that they were in abundance; that they were located favorable to facilities for water transportation; that besides the iron there was coal for coking and lime for flux, and that all these were contiguous to themselves and to water transportation.

Developments on Texada Island were pointed out as an example to show that there was no uncertainty as to the extent of deposits, Mr. Neild went on, and the quality of the iron was proven by analysis cards from the former Irondale smelter. All the usual objections were anticipated and dispelled in the information of the brief. It was shown how the higher price of coke could be made no bar to development; how the labor situation would be met, how favorable circumstances would more than overbalance the unfavorable ones,

and, finally, what the subsidiary development to an iron and steel industry would mean to British Columbia and to Canada. It was then that the bounty proposal of the delegation was presented to the Reconstruction and Development Committee of the Cabinet, with which the negotiations of the delegation by that time had been narrowed down to.

General Ignorance of Coast

"General ignorance of conditions on this coast was the greatest difficulty we had to combat in Ottawa," said Mr. Bledsoe in his opening remarks. If nothing else had come of the work of the delegation, he continued, apart from a general exposition of the West and Western ideas, the effort would have been worth while. The official map of Canada to which the members of the House of Parliament seemed to have access extended little farther in this direction than the western suburbs of the City of Winnipeg. This coast was practically unknown. There was a marked reluctance on the part of Easterners to absorb any of the facts. It was necessary, for instance, for the delegation to induce Mr. John Fraser to come to Ottawa from New York to substantiate his own words in a printed report of his findings in regard to iron possibilities here.

It was doubtful about the bounty proposal, the speaker went on, after the first twenty-four hours in the Capital, but the delegation was there to get what results were possible and to fight to the bitter end. Every Long Haul argument was convinced that development could not take place on this coast. Every Big Interest behind the Long Haul argument was just as loud in the same conviction. Every Little Interest back of the Big Interest behind the Long Haul argument clamored to be heard, and together they "made a noise like a Jass Band." "I believe," said Mr. Bledsoe, "that we would have come back absolutely empty-handed but for one thing. I mean that conference of some 40 odd steel magnates of the United States, who were threatened by their Government with confiscation of their plants unless the whole of their iron resources were diverted to the war needs of the nation."

Results from Coincidence

That announcement appeared in the press the day previous to an arranged meeting between the delegates and the Reconstruction and Development Committee, explained the speaker. By means of the coincidence it had been possible to wrest from the gentlemen the first ray of light—the question "what are we going to do?" This had followed the pointing out of the fact that during the current year 365,000 tons of iron and steel had been consumed in Canada, of which but 60,000 tons had been smelted here and but about fifteen per cent. of the latter amount from Canadian ore. From those facts the gentlemen were able to visualize the prospects for Canadian commercial enterprises when, during the reconstruction period after the war, Dominion firms would be forced into direct competition with those of the United States in the avenues of trade. It was subsequent to this that the Govern-

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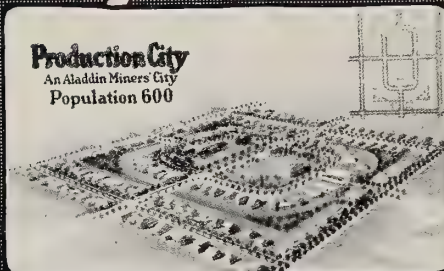
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The Aladdin Company will quote you a definite price on a single house or complete cities of 300, 500, 600, 1,000, 1,500 and 3,000 population. These cities are now listed in our book on Industrial Houses. Cities include homes, stores, churches, schools, municipal buildings, water distributing systems, electric light plants and distribution, sewerage systems, trees, etc.

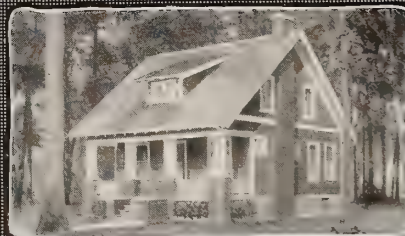
"Book of Aladdin Homes" No. 331 with full information, floor plans and prices will be mailed on request. Aladdin book "Industrial Housing" mailed only to inquiries written on business or official stationery.

Complete Cities

Production City
An Aladdin Miners City
Population 600



-or a Single House



CANADIAN ALADDIN CO Ltd

C.P.R. BLDG., TORONTO, ONT.

If building in the States address The Aladdin Co., Bay City, Mich.

ment announced that it would encourage development of Canadian iron resources to the extent of purchasing, if necessary, all production of pig iron for three years from any blast furnace established within the next two years. By the use of Government-owned or controlled railways this production could be distributed throughout Canada to meet requirements as they might arise. The speaker had been assured that the same undertaking would be made to apply to production of steel. "I confidently believe," said he in conclusion, "that the foundation has been laid for one of the biggest industrial developments British Columbia has ever known. But we can't rest on our oars yet. We must keep plugging away until we get the full realization of it."

Condensed Advertising

FACTORY FOR SALE

Brick building, in live city within fifty miles of Toronto. About 40,000 sq. feet floor space; well lighted on all sides; completely equipped power and heating plant. Building facing main line railway presents excellent advertising possibilities. Suitable for wood-working or light manufacturing. Write for particulars, Box 71 INDUSTRIAL CANADA.

FOR SALE

1 No. 23½ "B" Niagara Toggle Double Acting Drawing Press, 12" stroke, Press complete with all attachments. This machine has never been used and as we are anxious to make quick sale, no reasonable offer will be refused.—Renfrew Electric Mfg. Co. Ltd., Renfrew, Ont.

WANTED

By reliable Manufacturers' Agent one good line selling to wholesale hardware trade. Address "Hardware," Box 1934, Montreal.

FOR SALE

Two 6-inch Blackburn-Smith, No. 8 Pressure Filters, made by James Beggs & Co., Limited, New York. Price on application. Apply Dunlop Tire & Rubber Goods Co., Limited, 244 Booth Avenue, Toronto. (Mr. D. J. Kirkham).

WANTED

Manufacturers' Agent, with office in Montreal, excellent Montreal connections with manufacturing and wholesale trade, desires to handle additional lines on commission. If you are not represented in Montreal, shall be glad to have your proposition. Apply Box 10, INDUSTRIAL CANADA, Toronto.



Scene at the Entrance to a Coal Mine

BATHURST LUMBER CO.

LIMITED



Kraft Pulp, 65 tons per day

Unbleached Sulphite Pulp, 50 tons per day

Spruce Lumber, Band Sawn

White Pine Lumber, Band Sawn

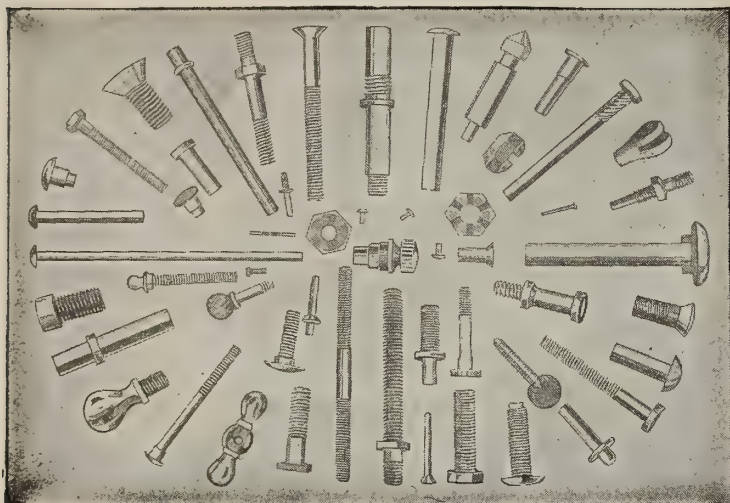
Complete Planing and Resaw Mill

Timber Limits, 1,500 Square Miles



BATHURST, N.B.

CANADA



Automatic Screw Machine Products

ACCURACY

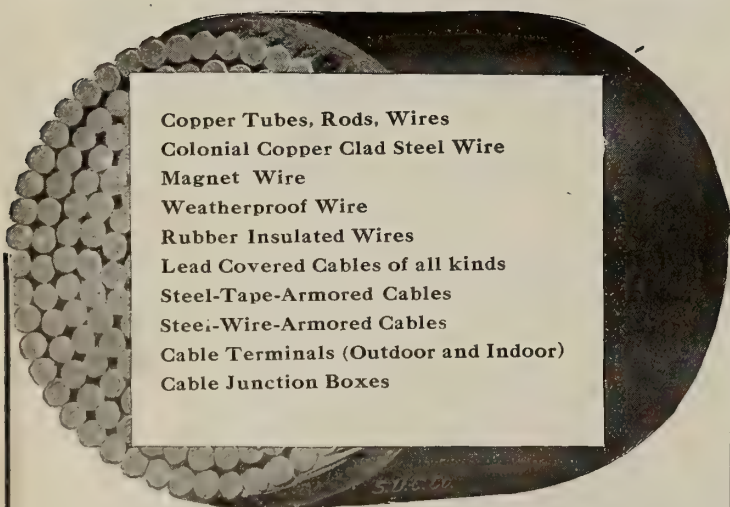
QUALITY

**Our Mechanical Engineers are at
the service of our Clients.**

UNITED BRASS & LEAD Limited

284 ST. HELENS AVE. - - TORONTO

W. L. TOBIAS, Superintendent
(Formerly Superintendent National Cash Register Co.)



Copper Tubes, Rods, Wires
Colonial Copper Clad Steel Wire
Magnet Wire
Weatherproof Wire
Rubber Insulated Wires
Lead Covered Cables of all kinds
Steel-Tape-Armored Cables
Steel-Wire-Armored Cables
Cable Terminals (Outdoor and Indoor)
Cable Junction Boxes

WE have unexcelled facilities for meeting your every requirement of the products listed above promptly and satisfactorily. This is only an outline list of our principal products which include all kinds of electric wires and cables and cable accessories.

We will appreciate an opportunity to quote on your requirements.

**Standard Underground Cable
Co. of Canada, Limited**

HAMILTON, ONT.

Montreal Toronto Hamilton Seattle

Catalogues and Booklets

Drive for Machine Tools

Under the heading "The Efficient Drive for Machine Tools," the Link-Belt Co. have sent out another of their interesting catalogues in which the argument is largely in the shape of illustrations. In fact, two-thirds of the space in the catalogue is occupied with half-tones, which are so arranged as to give first a general view of the shop in which the Link-Belt silent chain drive is in service, and second, a close-up view of the machines on which it is utilized.

"To-day when machines are being forced to produce their full-rated capacity—and more—24 hours per day," says the foreword, "the drives from prime movers to machines and from shaft to shaft on machines, are important factors in securing the desired output. Link-Belt silent chain combines the advantages of the belt and gear drives. It maintains over 98 per cent. efficiency, it is flexible, compact, operates on short or long centres equally well, and, when enclosed in our dust-proof, oil-tight casing, makes a most desirable 'safety-first' drive."

Meadows Coal Dealer

A four-page monthly bulletin, under the above head, is being issued by the Geo. B. Meadows Toronto Wire, Iron & Brass Works Co., Limited. Its purpose is to try to bring about better conditions in the handling of coal. Not only does the company aim through it to give advice and assistance, but it asks for contributions from dealers so that the publication may be mutually helpful. In the first issue there is an article on "Coal for the 1918 Season," by C. A. Meadows, which is quite readable and instructive.

Hydraulic Equipment

Catalogue "B," just issued by the Hydraulic Machinery Co., Limited, Montreal, is one of the most elaborate publications of its kind received for some time. It describes and illustrates a line of hydraulic equipment made in connection with the manufacture of ammunition, etc. There is little or no attempt made to describe the machines, reliance being placed on a series of excellently executed illustrations, which show the apparatus in close detail. A copy of this catalogue should be in the files of all manufacturers who are interested in hydraulic machinery.

Booklets About Tarvia

Two choice little pieces of advertising work have been done by the Erickson Company of New York in connection with booklets on "Tarvia," for the Barrett Company. The first of these is vest-pocket size and gives a description of what "Tarvia" is, how it is applied, and its advantages, including a number of photographs of roads in different parts of the United States and Canada, on which "Tarvia" is used. The other is entitled "The Avenue of Sublime Peace," and is an entertaining account by a practised writer of the way in which the Chinese have adopted this preparation in constructing roadways in the Forbidden City.

COMMERCIAL ACETYLENE IS USED IN LARGEST SHIPBUILDING PLANTS

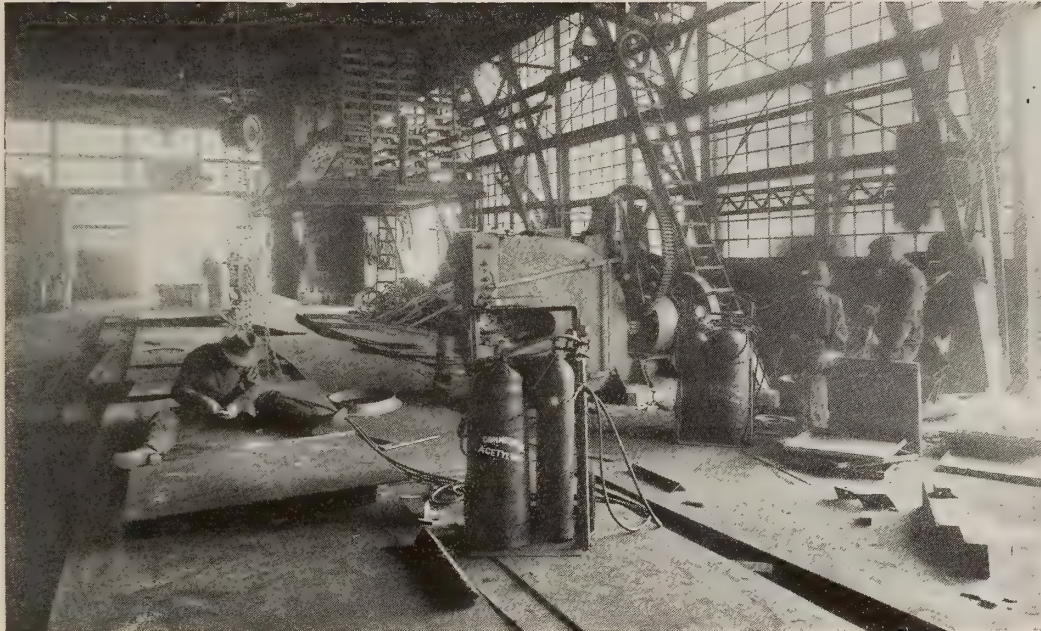


Illustration shows Commercial Acetylene cutting ship plates in one of the largest shipbuilding plants in Canada. We guarantee both quantity and quality of Commercial Acetylene. Write our nearest office about your supply.

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COMMERCIAL ACETYLENE SUPPLY CO., INC.
18 TORONTO STREET, TORONTO

Canadian Carbonate Company, Limited

Offices and Factories :

HALIFAX, MONTREAL, TORONTO
WINNIPEG, CALGARY, VANCOUVER



Manufacturers of

"CROWN BRAND" LIQUID CARBONIC ACID GAS



Loafing!

You can get an Insurance Policy to cover almost every form of loss—but this.

And it's the most serious loss that can confront any business—

Payroll leaks! No human book-and-pencil system can check them.

This is an age of machinery. You make money by machinery. Why not let machinery keep it for you? Plug the payroll leaks **TIGHT** with an

International Time Recorder

Get all the working time you pay for. Let us send you our latest folders. Internationals are made in Canada—by Canadians, with Canadian capital.



Glass Enclosed Dial Recorder—
Visible Records

International Business Machines Company, Limited

TIME RECORDER DIVISION

270 Dundas St. West, Toronto

FRANK E. MUTTON, Gen. Man.

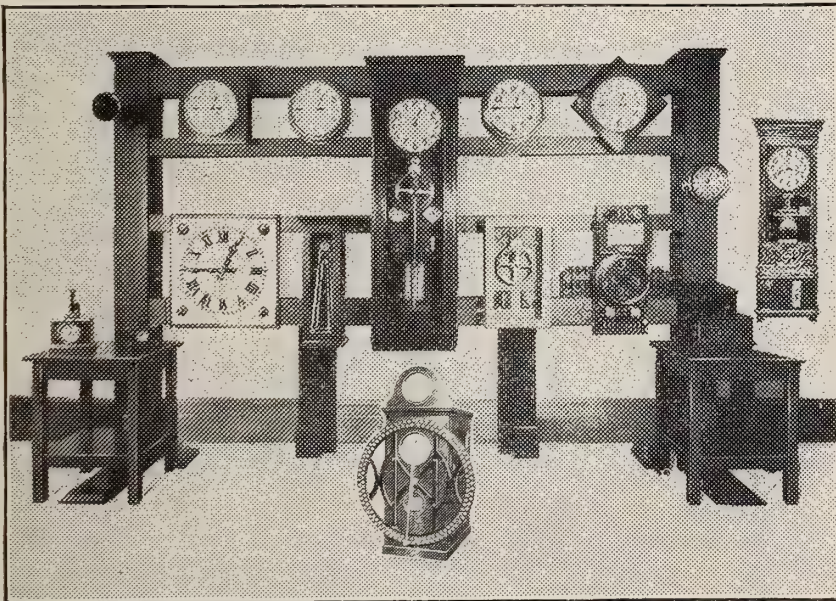
Branches at Montreal, Winnipeg, Vancouver

Also Manufacturers of Dayton Automatic Scales and Hollerith Electric Tabulators

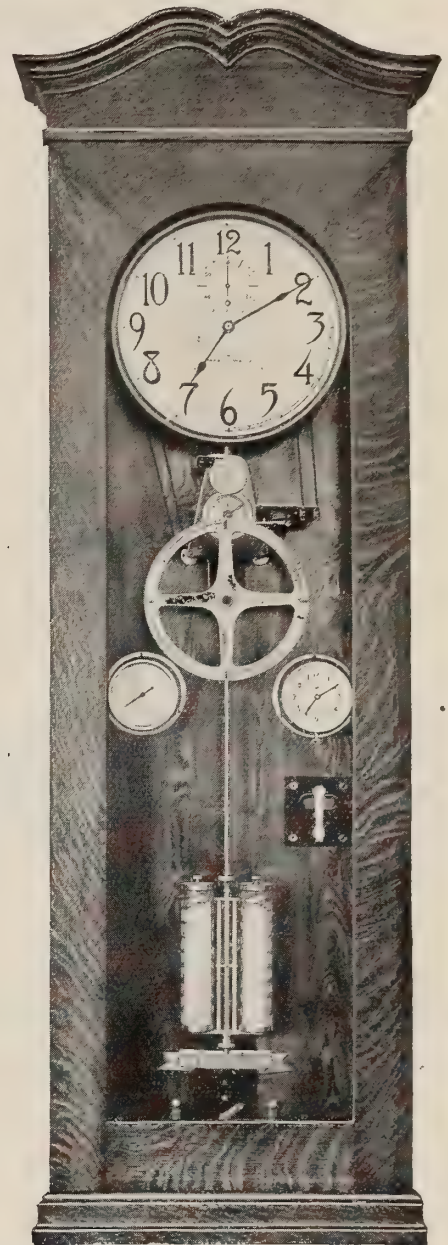
The International Master Clock

Your modern time-recording system demands that the clock time in all departments be absolutely uniform. To ensure this the clocks must be controlled by a Master Clock as manufactured in Canada by the International Business Machines Company (Time Recorder Division).

The Master Clock will control by electricity not only each time-piece in the plant, but also the In-and-Out Time Recorders and any mechanical Cost Recorders. It will control a program device which automatically rings gongs in any or all departments at any hours set. This gong service is valuable because the employees are not then watching the clock when it comes "near" to stopping time, so they do not lose their stride in their work. This prevents a serious leak in production and thus the initial expense of the Master Clock is quickly paid for.



All Electrically Operated—All Made in Canada



The International Master Clock
Made in Canada

We are the largest manufacturers in the world of Time Recorders, Secondary Clocks, Cost Recorders, Master Clocks, Program and Whistle Blowing Devices, Time Stamps and all Time Recording Devices.

*Let us send you our latest
Folders, very interesting indeed.*



International Business Machines Company, Limited

TIME RECORDER DIVISION

270 Dundas St. West, Toronto

FRANK E. MUTTON, General Manager

Branches at Montreal, Winnipeg, Vancouver

Also Manufacturers of Dayton Automatic Scales and Hollerith Electric Tabulators

Trade Enquiries

These enquiries come into our hands from various sources. The Weekly Bulletin of the Department of Trade and Commerce, from which the enquiries indicated in the sub-heading allotted to them are taken, should be read regularly by those interested in foreign trade. It will be sent free on application to the Department at Ottawa. The names connected with all those enquiries can be furnished direct from the Commercial Intelligence Department, Canadian Manufacturers Association, Toronto.

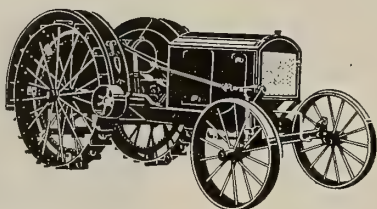
DOMESTIC TRADE ENQUIRIES

137. **Machines for Punching Holes.**—A company in Manitoba would like to hear from manufacturers who can supply machines for punching holes in thin leather straps.
138. **Fibre Waste Baskets.**—An Ontario firm wishes to get in touch with manufacturers of fibre waste baskets.

GILSON

"Goes Like Sixty"

**Tractors
Engines
Silo Fillers
Silos
Threshers**



DOMINANT IN QUALITY AND SERVICE

Write for Catalogs **240 York St.
Gilson Mfg. Co. Ltd. Guelph, Can.**

If you require quantities of

Small Stampings

Electro Plating

Turret Lathe Products

etc.

Send us your enquiries

THE
**NATIONAL ELECTRIC HEATING
CO., LIMITED**
TORONTO

139. **Agency.**—A correspondent in Quebec, who has had considerable experience in the shoe industry, would like to communicate with firms not already represented in the various provinces.
140. **Cardboard Fillers.**—A Nova Scotia firm desires to locate makers of the above fillers.
141. **Grindstones.**—We are in communication with a company enquiring for large grindstones 6 to 7 feet in diameter.
142. **Electric Bells for Mines, Etc.**—An enquirer is asking for the names and addresses of firms who can make electric bells for mines.
143. **Agency.**—We have a communication from representatives of a storage battery company, who call on garages, etc., in the Niagara district every two or three weeks, who would like to represent manufacturers who desire to get in touch with this trade.
144. **Agency.**—A Vancouver wholesale firm, whose salesmen call regularly upon grocers, confectioners, hardware and general stores in British Columbia, and who have Vancouver warehouses and delivery facilities, would be willing to establish connections with Eastern manufacturers of saleable lines not now represented in British Columbia.
145. **Agency.**—We are in communication with a gentleman who desires to get in touch with Eastern manufacturers with a view to representing them in British Columbia.
146. **Novelties.**—A correspondent in British Columbia wishes to get in touch with houses handling novelties suitable for canvassers.

IMPORT TRADE ENQUIRIES

147. **Aniline Dyes.**—A Lancashire firm, manufacturing aniline dyes, wish to get into touch with reliable Canadian agents.
148. **Nuts, Essential Oils, Essences, Corks, Etc.**—A correspondent at Barcelona, Spain, wishes to get into touch with Canadian importers of shelled and unshelled walnuts and almonds, soft and hard shelled almonds and shelled and unshelled pine cone nuts and hazel or filbert nuts; also, saffron, essential oils, essences, corks, etc.
149. **Eucalyptus Oil.**—The manager of a large company in Australia, producing various forms of eucalyptus oil, is travelling through Canada and intends calling on any manufacturers who may be interested in obtaining oils. This office will be pleased to forward the names of any interested parties.

EXPORT TRADE ENQUIRIES

150. **Agency.**—A Belfast firm of wholesale druggists and manufacturing chemists, stated to have spacious show-rooms both in that city and in other Irish towns, wish to secure post-war agencies of Canadian manufacturers of chemists' sundries of all kinds, also hardware, toys, stationery, firescreens, glass, curios, etc.
151. **Agency.**—A company in Barcelona, Spain, is interested in developing trade between Canada and Spain after the war, and would like to hear from Canadian manufacturers of such articles as dried cod, wood pulp for paper-making, tinned salmon, etc.
152. **Holland.**—A manufacturers' agent, who has had considerable experience and claims to be able to furnish first-class British references, is desirous of representing Canadian manufacturers in the Netherlands after the war. He has special facilities for introducing hardware, ironmongery for building purposes, machine tools, grinding wheels, etc. He would also like to receive illustrated catalogues from Canadian firms.

153. **Central America.**—A correspondent, who has resided in Costa Rica for a number of years, and is thoroughly conversant with the Spanish language, desires to get in touch with Canadian manufacturers with a view to representing them in Central or South America.
154. **Canned Meats, Fruits, Etc.**—A firm in the south of England wish to secure the representation of Canadian manufacturers of canned meats, fruits, etc.
155. **Wrought-iron Galvanized and Black Gas Tubes, Galvanized and Black Sheets.**—An Egyptian firm desire to correspond with Canadian manufacturers of wrought-iron galvanized and black gas tubes and galvanized and black sheets.
156. **Wire Nails.**—An Egyptian firm desire to correspond with Canadian manufacturers of wire nails.
157. **Peat-Cutting and Winning Machinery.**—An Irish development association asks for names of Canadian manufacturers of peat-cutting and winning machinery.
158. **Syrup.**—A firm of Seattle exporters are desirous of establishing connections with Canadian syrup manufacturers with a view to buying syrup for export to the Orient.
159. **Agency.**—A civil and electrical engineer, with extensive connections in Belgium, desires to get in touch with manufacturers of agricultural implements not already represented in that country. He is desirous in the meantime of joining said manufacturers in a capacity which will enable him to thoroughly learn and know their products with a view to representing them after the war.
160. **Mill Supplies.**—A party in the United States would like to hear from manufacturers of mill supplies.
161. **Agency.**—A correspondent desires to represent Canadian manufacturers of cut glass, china, silverware, cutlery, brass goods and dry goods, in the following places: Panama, Cuba, Jamaica, West Indies.
162. **Leather, Wood Pulp, Blankets and Cloth.**—A party in Japan would like to import chromic leathers, wood pulp, woolen blankets and cloth.
163. **Leather, Paper, Belting, Knit Goods, Metals, Wire, Hardware, Food Products, Soda (Caustic) 76 per cent.**—A firm of importers and exporters in China desire to get in touch with Canadian manufacturers of the above articles.

**EXPORT TRADE ENQUIRIES TAKEN FROM THE WEEKLY
BULLETIN OF THE DEPARTMENT OF TRADE
AND COMMERCE**

164. **Catalogues.**—A South African firm of import merchants requests correspondence, catalogues, price lists, and when possible samples of any line of goods suitable for the wholesale jobbing trade, mentioning in a special way hardware of all kinds, dairy and agricultural implements, tools of all kinds, locks and metal door furniture, lamps, lanterns, paints and varnishes, fencing and baling wire, wire netting, wire screens, household utensils and other kindred lines for the hardware trade.
165. **Dry Goods, Blankets, Hosiery and Underwear.**—A South African importing firm requests clippings, samples when possible, and quotations from Canadian manufacturers of piece-goods, blankets, hosiery, underwear, and other dry goods specialties.
166. **Rubber Goods.**—A Durban firm of merchants desires samples when possible, catalogues and price lists on all classes of rubber goods. They are prepared to purchase for Natal or act as agents for the Union of South Africa.

167. **Dowels.**—A Liverpool firm wishes to open connections with Canadian exporters who desire to shape dowels of maple and birch, 3/8 inch by 5-8 inch, after the war.
168. **Baking Powders, Etc.**—A Birmingham merchant is open to handle all kinds of powders and sundries used by bakers and confectioners.
169. **General Commission Merchant.**—A French business man, who has served in the French army and been honorably discharged, is now resuming his business as a general commission merchant in Bordeaux, France. He would like to make arrangements with Canadian exporters of provisions. He offers the services of an established and systematic organization, each department being supervised by a practical man, such organization being the result of eighteen years of commercial travelling. He makes large sales of canned salmon and lobster and all kinds of canned fish and dried vegetables. If shipping conditions will not permit business at the present time, he desires to arrange for after-war business. First-class references.
170. **Dried Fish, Canned Fish, Meat, Fruits and Vegetables, Cheese, and Wood-Pulp.**—A Spanish commission house having headquarters in Barcelona, with agents in the different trading centres in Spain, in Lisbon, Morocco and the Canary Islands, and now representing several important British manufacturers, wishes to arrange with Canadian exporters of the above-mentioned products and of other articles of Canadian manufacture.
171. **Sprays.**—A Durban firm of importers requests samples, prices and other details from Canadian manufacturers of sprays for orchard purposes.

RIDOUT & MAYBEE

Solicitors of Patents

Counsel, Solicitors and Experts in

PATENT SUITS

Agencies in the leading countries of the World.

EDWARD MAYBEE, Mech. Eng.

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CANADIAN COLLAPSIBLE TUBE CO., Limited

MANUFACTURERS OF

**"Premier" Pure Tin, Plain and Decorated
Collapsible Tubes**

221 RICHMOND ST. WEST

TORONTO

AN OPPORTUNITY

Manufacturing Business FOR SALE

Can be operated as a department in any factory
or run independently as it is at present.

Goods made patented and in universal demand—necessities not luxuries. Sales made direct and through jobbing houses. Will stand thorough investigation. Best reasons for selling.

**H. H. Hannon, 802 Bank of Hamilton Bldg.
HAMILTON, ONTARIO**

A National Obligation

\$55,000,000 went up in fire last year in the Dominion of Canada—physical loss only in the form of buildings, industrial plants, etc. The intangible loss, the value of the priceless records and documents that went up with this appalling material forfeit—records that, once gone, are gone forever—is beyond all computation.

Records are Irreplaceable

Physical property can be restored to its original condition—can even be improved upon. But the vital records—records which a business life-time has built up—records which form the foundation of your business—upon which your business is built and *grows*, cannot, in case of loss, be retrieved.

Records Worth Keeping are Worth Protecting

You put time, effort and thought into the preparation of business records—you employ a staff to keep them up—you place a high money value on them. Is it logical then, is it good business to leave them unprotected—liable to total extinction, you know not when.

A Record Safe Means Protection

What an insurance policy is to your buildings and physical property, a Record Safe is to the intangible assets of your business—your records and business documents. And it has this additional salutary feature: that though physical property may be wiped out, entirely, a Record Safe protects and guarantees the safety of those records that are always considered as constituting a "going concern."

Fire Protection an Immediate—a Vital Question

The question of protection against loss—both of your physical property and the intangible assets of your business—but the

latter more importantly so—is a vital one now, when waste of any kind is a public dereliction—adequate protection is in short, nothing less than a national obligation.

Delay May Bring Serious Consequences

Consider well this question. Then take immediate steps to provide the protection that the value of your business records and documents warrants. Any "Office Specialty" representative will be glad to tell you about the new fire resisting Record Safe—explain the double wall dead-air space feature, tell you the advantages of the light but essentially solid construction—and show you how a combination of filing units to contain your various records may be stacked in "Office Specialty" Record Safes.

THE OFFICE SPECIALTY MFG. CO., LIMITED

Home Office **NEWMARKET** **Canada**

Filing Equipment Stores also at:

Montreal Ottawa Halifax Hamilton Winnipeg
Regina Edmonton Vancouver

Illustration shows "Office Specialty" fire resisting Record Safe with stack of filing sections for various kinds of records. Roller shelves at bottom accommodate account books, ledgers, etc.

OFFICE SPECIALTY

FILING SYSTEMS

LABOR SAVING OFFICE DEVICES
"Y and E"
TIME IS MONEY

OFFICE AND FINANCE

The World's Money Markets After the War

Prosperity Will Probably Be Maintained After the War in Those Countries Which Will Be in a Position to Ask for Payment for Produce and Goods Sold to the Belligerents During the War—No Lack of Demand for Banking and Investment Money in All Countries

By SIR GEORGE PAISH

(From the "Railway Age Gazette")

RARELY has there been greater difficulty in coming to any definite conclusions as to the future course of the world's money markets, and were it not that the world's common interest was likely to induce, indeed to compel, every one to act with great consideration and with a quite unusual degree of wisdom, one would not be so hopeful about the future as the facts of the situation now justify. Actual experience of what has been accomplished during the present war fully warrants one in anticipating that any further difficulties will be safely overcome and that the world's credit system will emerge from the extraordinarily trying ordeal to which it has been subjected, not only uninjured, but greatly widened and strengthened. On every hand admiration is expressed for the wonderful manner in which money has been provided for war in all the belligerent countries, and every one now recognizes that such things would not have been possible but for the growth of banking and investment, which had rendered the credit system prior to the war so powerful and so efficacious in supplying the world with the capital it needed for the development of its natural wealth and manufacturing power, as well as for the provision of the machinery of transportation and of distribution.

No more convincing testimony to the efficiency of the credit system in providing money for war is required than the fact that all the money needed to finance the colossal expenditures of this war has been supplied on the general comment that if so much money can be found for war, then why not for improving the condition of the great mass of the people in all countries?

Why There Is Uncertainty

Certainly the credit system has attained a reputation in war which it will not be easy to live up to in peace, and it is partly because every one now recognizes that the bankers and investors in giving credit are able to create wealth that there is some uncertainty about the future. All the old landmarks and tide levels upon which bankers used to rely for guidance have been swept away by the great torrent of credit now sweeping over the world. It is obvious that the credit system of the past was merely a child in comparison with what it will be in future, now that in the present emergency it has become fully grown.

When one considers how greatly credit has contributed to the expansion of the world's wealth in general and to the well-being of these countries in particular in which it was most highly developed before the war, one realizes that after the war is over the well-being of the race will show a rate of progress never hitherto witnessed now that the possibilities of the credit system are so widely recognized; that is, pro-

vided that the war is ended by a democratic, clean and good peace.

To appreciate the course of the money market, not only during the war, but after the war is over, it is essential to take the experience that is now being gained by the public into account.

The experience gained of war in these days shows that with everyone co-operating, and with everything possible being done to facilitate the creation of credit, both nationally and internationally, there is practically no limit to the amount of money that can be borrowed, both from bankers and from the investing public.

Not Adding Permanent Wealth

Of course, it is essential that we should all realize that at the present time these vast credits are not adding to the permanent wealth of the world, and that for the greater part they are pure inflation, forcing up the prices of commodities, wages and profits. Nevertheless, they are attaining the end in view, the stimulation of human effort to produce things needed in a great crisis, and to enable war to be waged on a scale never hitherto regarded as possible. Nor can it be denied that if the object in view had been the creation instead of the destruction of wealth, the world's well-being could have been enhanced in a most remarkable manner by such a vast creation of credit.

And no one can doubt that the world, having had such an object lesson in the possibilities of credit, will seek to apply its advantages after the war to the production of wealth, and that as a result of this wider knowledge and appreciation of the power and the value of credit wealth will increase much more rapidly in the future when the war is over than it did in the past.

It is the situation thus created that renders any forecast of the future of the money market a matter of very great difficulty.

One thing, however, is clear—that there will be no lack of demand for banking and investment money in all countries, both for the purpose of pursuing the war and, when peace comes, carrying out the work of reconstruction. The proportions of the sum required that will be provided by bankers and investors respectively cannot yet be decided. That depends upon many considerations. Just now investors in Europe are disposed to think that the war has entered upon its last stages, and that the economic pressure upon Germany and Austria will at last have the desired result, and are rather more disposed to allow their money to accumulate in the hands of bankers until they can form a clearer idea of how long the war

BANK OF MONTREAL

Established 100 Years (1817-1917)

Capital Paid Up	-	-	\$16,000,000
Rest	-	-	16,000,000
Undivided Profits	-	-	1,784,979
Total Assets	-	-	\$426,322,096

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A GENERAL BANKING BUSINESS TRANSACTED

ESTABLISHED 1875

IMPERIAL BANK OF CANADA

CAPITAL PAID UP \$7,000,000 RESERVE FUND \$7,000,000

WAR SUPPLIES

This Bank is ready to assist merchants and manufacturers to increase their production of war supplies.

When a loan will effect this, consult our local manager.

HEAD OFFICE:

32 WELLINGTON ST. EAST, TORONTO

Branches in all principal centres in Canada

is likely to last. The consequence of this is to bring about a plethora of banking money in London and to cause bankers to reduce the rates of discount, and the Government its rate for treasury bills. But already a greater attractiveness of Government bonds in comparison with bankers' deposit rates and treasury bills is again causing investors to subscribe to the Government loans more freely.

Fluctuations of this kind are, of course, inevitable, and can be more or less ignored, the essential factors in the situation being the constant need of all the money that can be supplied both by bankers and investors in all parts of the world until the war is over.

After the War Conditions

In considering the post-war situation account must first be had of the position that the war will leave. First of all, we shall have the fact that the belligerent nations will be heavily indebted to the rest of the world for produce and foods supplied during the war, the payment of which they have been allowed to finance temporarily in the countries from which the things have been bought.

Of course, if the countries in which these temporary loans are incurred were to demand immediate payment of the money due them a very awkward situation would arise. But they are likely to do nothing of the sort. In the past these countries have obtained very valuable help from France and Great Britain in the shape of immense loans of permanent capital for the development of their resources, and now that the situation is reversed they are likely to act with the same consideration as was shown to them, and to make no demand for payment which cannot be readily met.

What is likely to happen is that these countries, which normally are borrowers and not lenders, and need to import more goods than they can usually pay for by exports, will, after the war is over, again begin to go ahead and will take payment of the loans they have made to other countries during the war in the goods they need for their development. In other words, they will gradually take back the capital which they have accumulated abroad during the war from their great sales of goods and produce, and will not need to borrow from other lands until the money due to them is liquidated. In this way the balance of trade against the belligerent nations that has piled up during the war will be gradually adjusted until eventually the effect of the war entirely disappears, and the world resumes business as usual.

The inevitable effect of this situation will be to maintain prosperity and the volume of business in the countries that are now greatly adding to their wealth and are in a position to ask for payment after the war for the produce of goods sold to the belligerents during the war. On the other hand, the need to repay these loans will compel the belligerent nations to become both economical and efficient in order to produce the goods they will require to export in order to redeem the debt they have incurred to other nations as speedily as possible.

Maintaining Present Prosperity

Possibly, but not probably, this temporary debt will be liquidated by sales of securities possessed by the warring countries, whose holdings of foreign securities alone amount to some £7,000,000,000 (\$35,000,000,000). But inasmuch as the countries to whom the money is due will for the most part need it for new capital expenditures, not much of the debt is likely to be liquidated in this manner.

But whatever view is taken, it is obvious that the international financial situation after the war will be a very complicated, not to say a delicate, one, and will need to be handled with the greatest wisdom and circumspection.

Indeed, the importance of adjusting the financial situation will not be inferior to that of finding a solution of the economic situation. In Russia we see that food is plentiful in some parts of the country, while in other parts vast numbers of people are starving because they have not the means of purchasing the food they need. No very great difficulty would have been experienced in adjusting this situation had the rulers of Russia really wished to do so; had given a reasonable amount of thought and good will to the matter, and had applied themselves to adapting the country's financial machinery to its economic needs.

It is of supreme importance that a situation such as that now existing in Russia should not be allowed to arise in the world at large after the war, with consequences as appalling as, or even more appalling, than have been witnessed in Russia.

Already suggestions have been made to bring about an understanding between all the nations of the world for the purpose not only of mutual defence and protection against any aggressive country in the future, but also to deal with the grave economic situation likely to arise after the war, when the peoples of the enemy countries will be prepared to bid for food and raw material at any price unless an arrangement has been already reached for distributing the world's supplies of the essentials of life equitably between the nations. And it is obvious that a similar understanding is demanded for dealing with the financial situation, not merely for the purpose of dealing with the problems directly arising from the war, but in order to provide the poorer nations of the world with the financial assistance they will urgently need in order to enable them to pay for the food and raw material they will want to preserve them from starvation.

Bank of Montreal

Semi-Annual Statement Shows How the Bank Has Drawn on Outside Reserves to Meet Requirements of Dominion

The outstanding feature in the report of the Bank of Montreal for the six months ending April 30th last is the very large increase in the extent of the co-operation the bank has found it possible to lend to the Canadian and British Governments and Canadian cities and municipalities, and at the same time attend to its full share of the expanding business of the country. In order to do so it has steadily drawn in resources it has been carrying in outside financial centres, but at the same time is keeping them at a level which lends confidence for the future. As a result of this co-operation there is a substantial reduction in call and short loans in Great Britain and the United States, and a corresponding increase in the bank's holdings of Canadian, British and Colonial securities, in loans to cities and municipalities, and in current loans and discounts. Of equal interest is the continued very large increase in savings accounts, even in the face of withdrawals of many millions for investment in the last Victory Loan.

The assets make a new high record at \$426,322,096, as compared with \$386,806,887 a year ago, a gain of practically \$40,000,000. Of this amount liquid assets amount to \$291,624,073, as against \$270,004,422.

An examination of the assets discloses the full co-operation that has been given the Imperial and Canadian Governments and manufacturers. The call and short loans in Great Britain and the United States and balances due by banks and banking correspondents elsewhere than in Canada has been reduced to \$112,264,006 from \$137,346,807. At the same time Canadian

THE ROYAL BANK OF CANADA

Capital Authorized	- - - -	\$ 25,000,000
Capital Paid Up	- - - -	12,911,700
Reserve and Undivided Profits	- - - -	14,564,000
Total Assets	- - - -	335,000,000

HEAD OFFICE - MONTREAL

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F. J. Sherman, Asst. General Manager
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Branches in every Province in the Dominion of Canada and in **Newfoundland**; in **Havana** and throughout **Cuba**, Porto Rico, Dominican Republic, Costa Rica, and Venezuela; **Antigua**, St. John's; **Bahamas**, Nassau; **Barbados**, Bridgetown; **Dominica**, Roseau; **Grenada**, St. George's; **Jamaica**, Kingston; **Montserrat**, Plymouth; **Nevis**, Charlestown; **St. Kitt's**, Basseterre; **Trinidad**, Port of Spain and San Fernando; **British Guiana**, Georgetown, New Amsterdam and Rose Hall (Corentyne); **British Honduras**, Belize.

BARCELONA, Spain—Plaza de Cataluna 6.

LONDON, England, OFFICE—Princes St., E.C.

NEW YORK AGENCY—Cor. William and Cedar Streets. (Savings Department at all Branches.)

THE CANADIAN BANK OF COMMERCE

SIR EDMUND WALKER, C.V.O., LL.D., D.C.L., President

SIR JOHN AIRD
General Manager

H. V. F. JONES
Ass't General Manager

CAPITAL PAID-UP, \$15,000,000
RESERVE FUND, \$13,500,000

Extension of Canadian Trade

The Bank will make enquiries into the possibilities and requirements of markets abroad for exporters or importers who desire to extend their trade with British colonies or possessions. Owing to the large number of its correspondents and agents it has unusual facilities for this work.

S 37

municipal securities and British, foreign and Colonial public securities other than Canadian have increased to \$45,280,436 from \$28,090,026 a year ago, and the deposit in the Central Gold Reserves now stands at \$13,500,000, compared with \$7,000,000. The larger business being handled is reflected by total current loans of over \$109,000,000, as compared with slightly over \$98,000,000 a year ago, and loans to cities, towns and municipalities have advanced to \$18,136,406 from \$11,380,184. The larger business has in turn made for an increase in the notes of the bank in circulation, these now standing at \$28,349,607, up from \$21,891,437.

From the standpoint of the general public perhaps the outstanding feature of the statement is the very large gains the bank continues to make in deposits. When it is recalled that many millions have been withdrawn by subscribers to the Victory Loans, a net gain of over thirty-three millions would seem to reflect the confidence Canadian people have in the position maintained. Deposits bearing interest now stand at \$247,904,855, as compared with \$232,731,994 a year ago, while deposits not bearing interest gained to \$109,851,949 up from \$91,412,284.

The profit and loss account shows the usual ample margin over dividend and bonus requirements. The profits for the six months amounted to \$1,287,586, compared with \$1,182,610 in the corresponding period last year. The profits, added to the balance of profit and loss, brought the total amount available for distribution up to \$2,952,479. This was distributed as follows:

Dividends and bonuses at the regular rates, \$960,000; war tax on bank note circulation, \$80,000; subscription to patriotic funds, \$27,500; and provision for bank premises, \$100,000, leaving the amount to be carried forward \$1,784,979, as compared with \$1,557,034 a year ago.

North American Pulp

Company Was Able to Show Surplus in 1917, as Against a Large Deficit in the Previous Year

A surplus of \$105,165 for the year ended December 31st, 1917, as against a deficit of \$309,360 for the year previous, is the showing made by the North American Pulp and Paper Company and its subsidiaries, according to the annual report of the concern, which has just been made public. Factors contributing to the report are a decrease of \$524,000 in operating expenses and an increase of \$421,137 in the item "other income."

The gross operating revenue for 1917 was \$3,528,451, or \$434,659 less than in 1916, while the operating expenses were \$2,839,097, a drop of \$524,000. Total income of \$1,318,740 in 1917, compared very favorably with \$808,262 the previous year, while the surplus recorded for the twelve months just reported was \$105,165, in comparison with a deficit of \$309,360 for the same period a year previous. Minority stockholders' proportion of profits in controlled companies in 1917 was \$59,563, while in the year 1916 it was but \$3,052, making a final balance of \$45,602 for the year just ended, as compared with a final deficit of \$312,412 in 1916.

The finance committee is giving consideration to a plan for the retirement of the outstanding preferred stock, so that only one class of stock, a non-cumulative issue, will exist.

In accordance with an agreement made in October, 1916, President J. E. A. Dubuc has turned over to the company 59,302 shares of his present holdings, which he undertook to do if the net earnings in 1917 were less than \$1,500,000. A similar guaranty for 1918 is held by the trustees of the company from Mr. Dubuc.

The company, which was organized in 1915, includes the Chicoutimi Pulp Co. and the St. Lawrence Pulp and Lumber Companies.

UNION BANK OF CANADA

Established 1865

Head Office, Winnipeg

Paid-up Capital.....\$5,000,000

Reserve Fund.....\$3,400,000

Total Assets over.....\$140,000,000

FACILITIES FOR HOME AND FOREIGN TRADE

With 305 Branches in Canada, from Halifax to Prince Rupert, the Union Bank of Canada offers excellent facilities for the transaction of every phase of modern banking business.

In connection with export trade, attention is particularly drawn to the advantages offered by the Foreign Exchange Department of our London (England), New York and Montreal Offices, and Manufacturers and Exporters are invited to avail themselves of the Commercial Information Bureaus established at these Branches.

NEW YORK AGENCY: 49 WALL ST., NEW YORK CITY---GEO. WILSON, Agent.

Wabasso Cotton Co.

Capital Stock Has Now Been Placed on a Regular Five per Cent. Dividend Basis

The capital stock of Wabasso Cotton Co., Ltd., has been placed on a 5 per cent. dividend basis with the declaration of a payment of 2½ per cent. on July 2nd to shareholders of record June 15th.

Any doubt as to the intention of the directors to inaugurate a regular 5 per cent. dividend policy appeared to be removed by the unusual form of the announcement. It was stated that "a dividend of 1¼ per cent. each for the last two quarters ending June 30th" had been declared.

A dividend has been considered in prospect for some time this year, but action came much sooner than expected. Surplus earnings for the year ended June last were \$61,321, equal to less than 4 per cent. on the \$1,750,000 share capital.

The company has a bond issue of \$921,000 and a common stock capitalization of \$1,750,000.

Canadian Cottons, Limited

This Important Industry Reports Record Profits for Fiscal Year Ended March 31, 1918

New high records have been made by Canadian Cottons, Limited, both in regard to volume of business and in profits. In the year ended March 31st last sales totalled \$7,573,000, as compared with a previous showing of \$5,719,000. Net profits, including income from rentals, amounted to \$836,125 after depreciation, against \$792,832 a year ago, when previous performances of the company had been exceeded.

The high prices of cotton goods, of course, enter largely into results of sales and profits. There are no quantitative figures as to output, the report merely stating that "notwithstanding the shortage of labor prevailing throughout Canada the output of your mills has been quite up to expectations."

The surplus earned on the common stock, after deducting depreciation, the amount for which is given specifically this year for the first time, bond interest and preferred stock dividend, was equal to 14.6 per cent. on the \$2,715,500 issue, against 12.4 per cent. a year ago.

Profit and loss figures for three years compare as follows:

	1917-18.	1916-17.	1915-16.
Profits	*\$636,615	\$593,272	\$515,114
Rentals	199,510	199,559	201,434
Total profits	\$638,125	\$792,832	\$716,548
Bond interest	209,700	209,700	209,700
Balance	\$626,425	\$583,132	\$506,848
Preferred dividend	219,690	219,690	219,690
Balance	\$406,735	\$363,442	\$287,158
Common dividend	122,197	108,620	.....
Balance	\$284,538	\$254,822	\$287,158
Reserve	10,000	35,574	10,000
Surplus	\$274,538	\$218,248	\$277,158
Previous surplus	1,598,571	1,380,322	1,103,163
Surplus	\$1,873,109	\$1,598,571	\$1,380,322

*After providing \$290,000 for depreciation.

Established in 1836. Incorporated by Royal Charter in 1840.

THE BANK OF BRITISH NORTH AMERICA

Paid-up Capital - \$4,866,666
Reserve Funds - \$3,017,333

Statement to the Dominion Government
(Condensed), 31st January, 1918
LIABILITIES TO THE PUBLIC.

Notes in Circulation.....\$ 5,312,540
Deposits.....56,732,358
Due to other Banks.....884,788
Bills Payable (Acceptances by L/O) 1,366,843
Acceptances under Letters of Credit (as
per contra)1,113,404
\$65,409,933

ASSETS.

Cash on Hand and in Banks.....\$13,156,263
Deposit with Government o/a Note
Circulation.....245,822
Deposits in Central Gold Reserve.....1,970,000
Government, Municipal and other
Securities.....12,591,380
Call and Short Loans.....7,521,447
Current Loans and Discounts and
other Assets.....36,410,840
Liabilities of Customers under Letters of
Credit (as per contra)1,113,404
Bank Premises2,409,292
\$75,418,448

Riordon Pulp & Paper Company, Limited

Montreal

SULPHITE FIBRE WOOD PULP FOR PAPER MILLS

CAPACITY 60,000 TONS PER YEAR

HAWKESBURY "IMPERVIOUS SPRUCE" SHEATHING in 36 and 72-INCH ROLLS

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Saw Mills:

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The Merchants Bank of Canada

Head Office, MONTREAL

Established 1864

Paid-up Capital	-	-	-	-	-	\$ 7,000,000
Reserve Funds	-	-	-	-	-	7,437,973
Total Deposits (April 1918)	-	-	-	-	-	112,234,673
Total Assets (April 1918)	-	-	-	-	-	140,937,544

Board of Directors

Sir H. Montagu Allan, C.V.O., President		
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Value of Lightning Rods

Some Pointers Regarding Their Use in Connection With Water-Towers on Industrial Plants

A paper compiled by R. S. Whiting, architectural engineer, and published by the National Lumber Manufacturers' Association, contains suggestions regarding the value of lightning rods. Statistics show that in the United States the annual property loss due to lightning is about \$8,000,000, while the average number of persons struck by lightning is 1,500. Mr. Whiting states that lightning rods reduce the fire hazard 80 to 90 per cent. in the case of houses, and 99 per cent. in the case of barns. Any style or system of lightning rods is better than none at all, but in order to procure the highest degree of efficiency standard rods should be used.

The Metals Used

The metals used consist of copper and iron. The iron should be galvanized to prevent rust; the rods may be painted.

Air terminals should be located at all high points and projections, and the distance between the points along ridges and parapets should not exceed 25 ft. Down rods should be run in such a manner that the discharge on any one terminal may have two or more paths from the base of terminal to the ground, where practicable. As straight a run as possible should be provided for the down rods, and the fasteners should be spaced not more than 5 ft. apart and be of the same material as the rods. They should be securely fastened in place, suitable allowance being made for expansion. Three ground terminals must be provided where the required number of air terminals is more than six, but not more than twelve.

Too much stress cannot be laid on the necessity of properly installing ground terminals, as they are the means by which electric contact is made between the lightning rod and the earth.

Buildings and Tanks

In the case of a two-gable house the ground terminals are placed to good advantage at diagonally opposite corners, one terminal being placed where the rain-spout discharges.

Regarding the lightning equipment for water-towers, the height of the structure determines the size of the conductor. Only one air terminal is required, located and properly supported at the highest point of the roof. Tanks higher than 60 feet should have at least two ground terminals, while steel tanks supported on steel trestles need be provided only with ground terminals, properly bonded to the bottom of the trestle.

The expense of installing a standard lighting system becomes a matter of little consequence as compared with the expense of rebuilding at the present high cost of materials.

The Late Alfred R. Miller

Mr. Alfred R. Miller, treasurer of the Canadian Westinghouse Co., Limited, died at Hamilton, Ont., on Sunday, April 28th, 1918, aged 43 years. Mr. Miller was born in England, and removed to Canada with his parents at an early age. His whole business life was virtually spent with the Westinghouse interests in Canada, he having entered their employment in his young manhood about twenty years ago, and by his ability, industry and close application to business, progressed with the company until at the time of his death he occupied the responsible position of treasurer. Mr. Miller endeared himself to a host of friends by his kindly disposition and thoughtfulness for others.

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It is your
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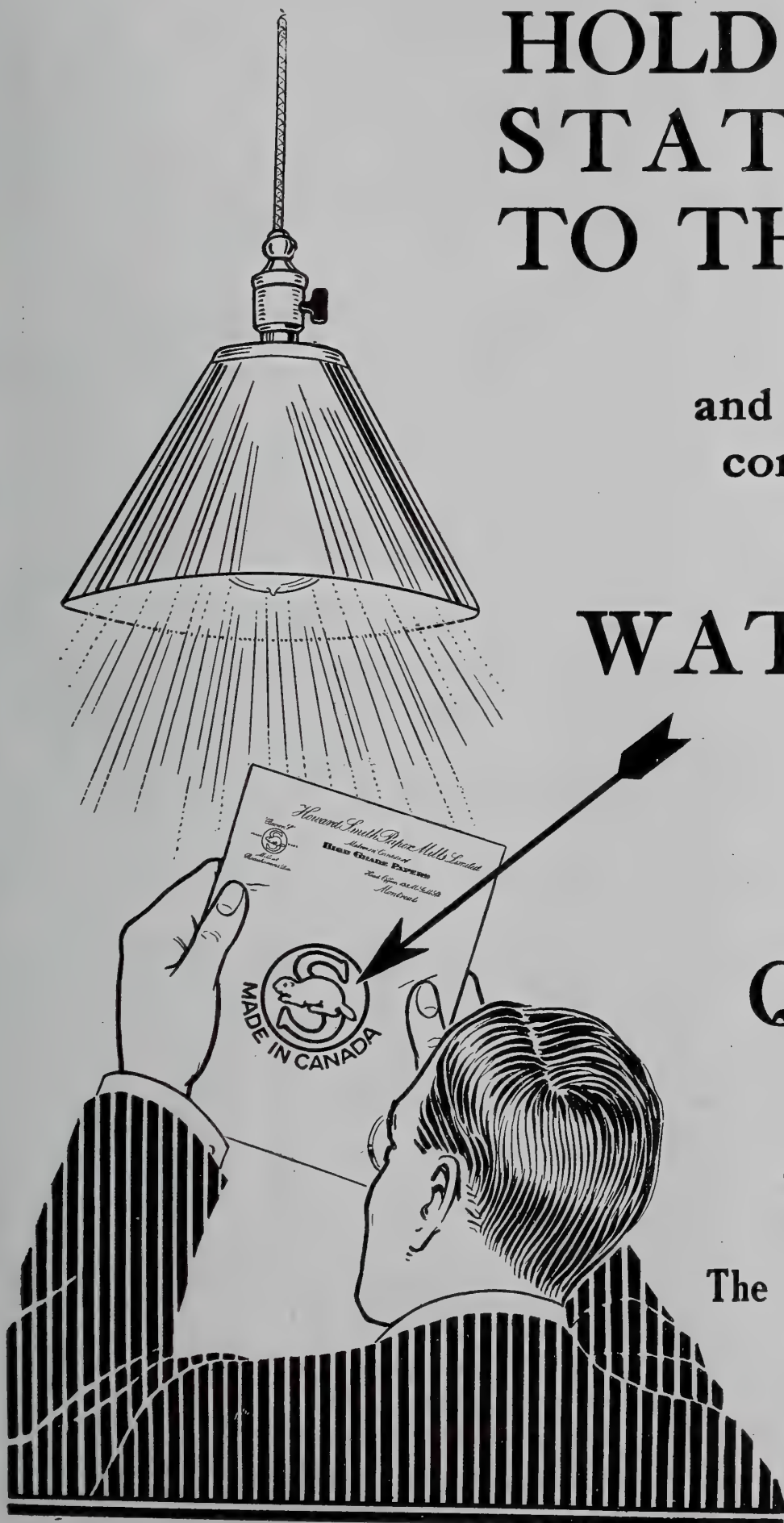
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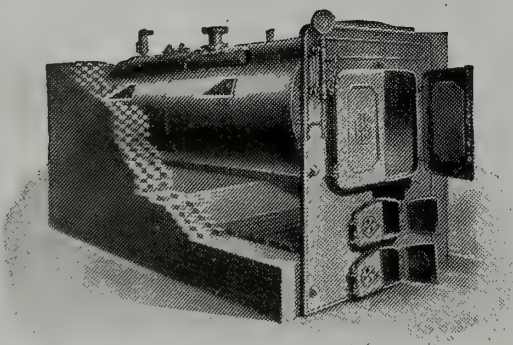
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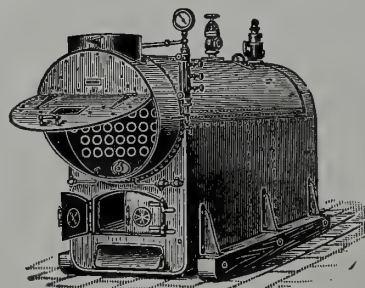
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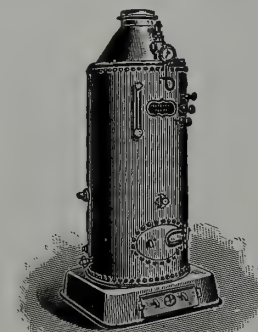
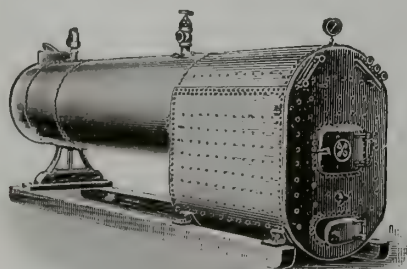


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Promptitude and quality being strictly observed.

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Fluid Compressed Steel Forgings

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General Sales Office :
WINDSOR HOTEL, MONTREAL

Head Office :
NEW GLASGOW, N.S.

Among the Industries

Under this heading are published items of news of current interest concerning the activities of Canadian manufactures. Information about changes of interest, enlargement of plants, and plans for future developments are always welcome, and are published free of charge, provided they should not be properly classified as advertisements

*Items prefixed with an asterisk are based on official information received in each case from the companies mentioned. Other items, while secured usually from reliable sources, have not the same authoritative origin.

ALBERTA

Calgary

The Alberta Flour Mills, Limited, will erect a flour mill at a cost of a million and a half dollars.

Edmonton

The P. Burns Co. are reported to be considering large additions to their packing plant here.

Lethbridge

P. Burns & Co., Calgary, contemplate the erection of an abattoir here.

The Crystal Dairy, Limited, 233 Fifth St. E., will erect a \$25,000 creamery.

Medicine Hat

Fire did damage of between \$40,000 and \$50,000 to the plant of the Rolling Mills recently.

BRITISH COLUMBIA

New Westminster

Lang & Roddis, of Rosedale, B.C., intend to erect a saw and shingle mill near Hope, B.C.

Work is being started in connection with the sawmill of the Timberland Lumber Company on the south side of the Fraser River, just across from New Westminster. It is hoped to have the mill in operation by December.

Port Edward

A cannery will be erected by the Port Edward Fisheries, Limited.

Sidney

About \$20,000 worth of repairs are being made to the plant of the Sidney Mills. This industry was acquired in the spring of 1917 by G. R. Walton from the Canada Southern Lumber Co. The mill site covers eight acres and is conveniently located on the water-front. H. C. Winston has been superintendent since last October.

Steveston

Fire destroyed the Star, Lighthouse and Steveston canneries, several hotels, and a block of stores recently. Loss, estimated at \$400,000.

THE CANADIAN APPRAISAL COMPANY LIMITED

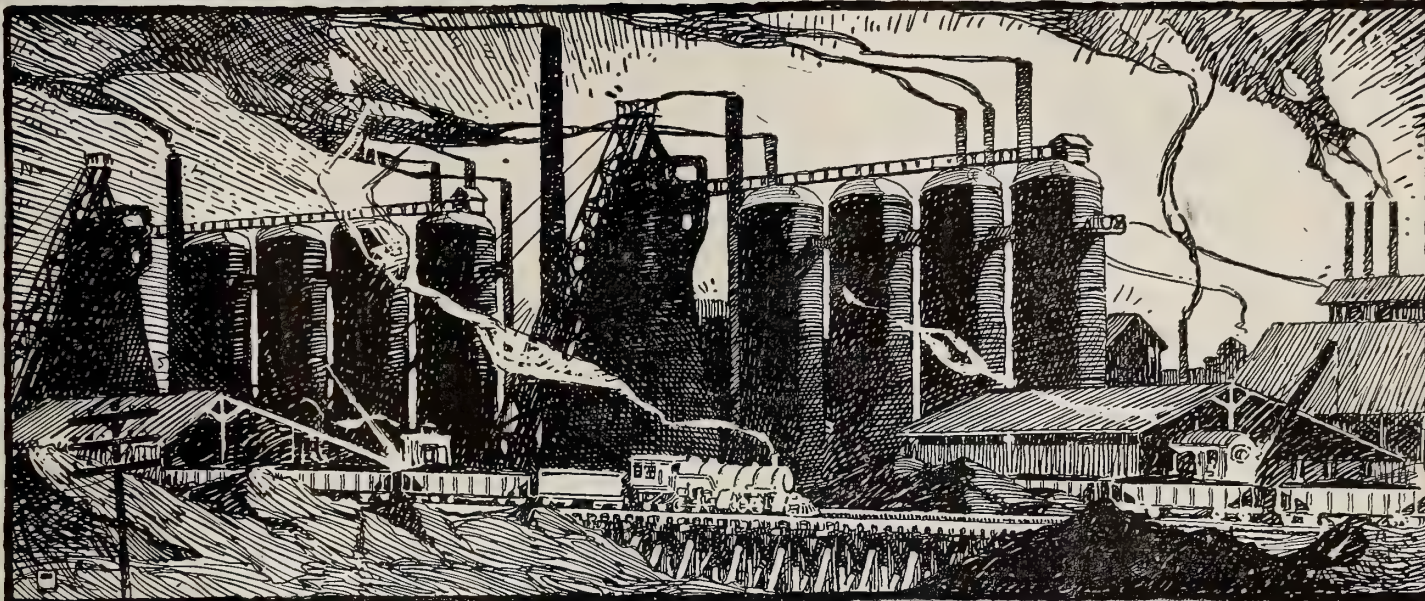
MEMBERS of the Canadian Manufacturers' Association attending the Annual Convention are cordially invited to visit our office while in Montreal, where every courtesy will be extended them.

The question of plant values is a live topic at present and we shall be happy to discuss it with any manufacturer interested.

**Head Office, 17 St. John St.
MONTREAL**

**Toronto
Royal Bank Bldg.**

**New York
Equitable Bldg.**



LITTLE WORDS WITH BIG MEANING



According to "Webster,"
Quality is "an excellence
of character; natural
superiority."



Webster's definition of
"Service" is; "The per-
formance of labor for the
benefit of another."

We use these words advisedly—fully understanding their definitions—and realizing the obligation we place upon ourselves by their continued use in connection with our products of Iron and Steel, and our attitude to the people we serve.

THE STEEL COMPANY OF CANADA

MONTREAL LIMITED HAMILTON

Pig Iron,
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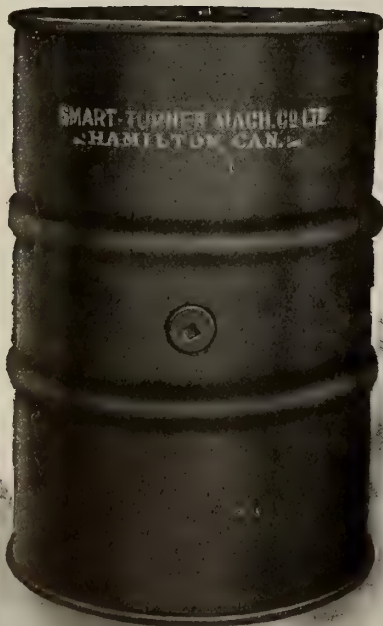
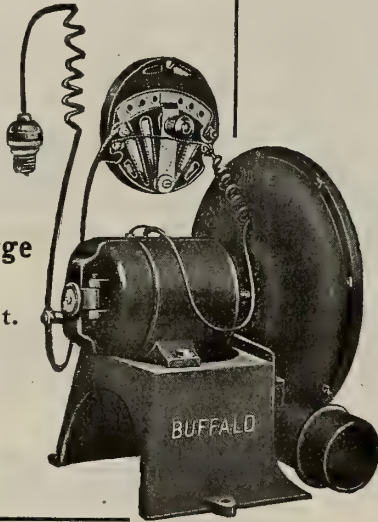
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Vancouver

Fire in the J. Coughlin & Sons' shipyard on False Creek did damage on May 15 to the extent of between \$1,500,000 and \$2,000,000. A fireman was killed. The steel steamer "War Chariot," about two-thirds completed, was engulfed in the flames. The ways, which are built on piles, fell through, and the hull, twisted by the heat, is now half submerged in the water beneath. The hull of the steamer "War Charger," on No. 3 ways, still stands, but the plates are badly buckled by the heat.

The Greater Vancouver Industrial Commission contemplate the establishment of a woolen mill.

The Standard Shipbuilding Co. have recently been awarded contracts for eight wooden steamers, two for the Brazilian Government and six for the French authorities.

MANITOBA

Brandon

An \$80,000 addition to the plant of A. E. McKenzie Co., Limited, Ninth Street, is contemplated.

Winnipeg

Contract has been let for a \$16,500 addition to the plant of the Union Abattoir Co.

NEW BRUNSWICK

Kedgwick

Fire destroyed a lumber mill owned by the Richard Manufacturing Co., recently.

Moncton

W. C. Newcomb, P. J. Ward, Ella K. Shea, all of Moncton, have been incorporated under the name of Maritime Linen Mills, Limited, with head office at Moncton and a capital stock of \$24,000. The company is empowered to take over the plant and business of the Eastern Linen Mills, Ltd., and to conduct a general manufacturing and trading business in linen and other textiles and goods.

St. John

Steen Bros., Limited, have been incorporated with a capital stock of \$49,000 and head office at St. John. The company is authorized to carry on a business of manufacturing millers, dealers in flour and other feed stuffs, and similar business. Those incorporated are A. J. McLaggan and Mrs. Dora W. McLaggan, of South Devon; Alex. S. Steen, Mrs. Vida B. Steen and J. D. P. Lewin, of St. John.

T. McAvity & Sons, Ltd., are erecting a building 400 feet long by 100 feet wide at their plant on Rothesay Avenue. The addition will be constructed of reinforced concrete and brick and will be placed immediately to the rear of the present plant.

Thos. Nagle, a promoter of a proposed steel shipbuilding plant at Courtenay Bay, N.B., states that a contract for two vessels of 8,000 tons each has been received by his company. Plans have been prepared for the plant, and work will go ahead as quickly as possible.

NOVA SCOTIA

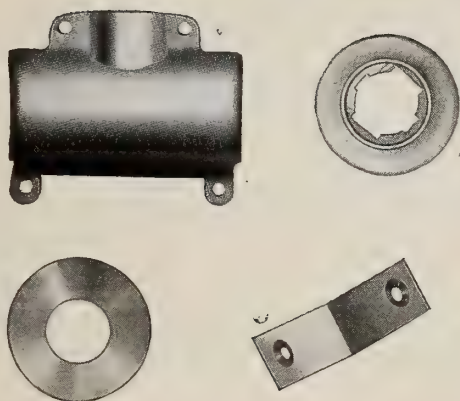
Halifax

Moir's Limited have let contracts for the erection of an \$18,000 box factory at the corner of Argyle and Duke Streets.

New Glasgow

A factory owned by James Eastwood was destroyed by fire with a loss of \$15,000.

SHEET METAL STAMPINGS



There are many difficult problems in connection with Steel Stampings and deep drawn metal work, but we have not yet encountered a problem too difficult to be solved by our unusual experience and equipment. Let us help you solve your difficulties in this class of work. What we are doing daily for others, we can do for you.

Your enquiry will have prompt and careful attention.



THE PEDLAR PEOPLE LIMITED

MANUFACTURERS OF

PEDLAR'S "PERFECT" PRODUCTS
SHEET-METAL

Oshawa

Canada

Pugwash

The Cumberland Shipbuilding Co. has been formed with F. R. Dakin as president and H. J. Logan, K.C., vice-president, and work has already been commenced on a three-master of 300 tons register. The shipyard is located on the west side of the harbor and is an ideal location.

Windsor

The large plaster quarries on the outskirts of the town have suspended work and 300 men have been thrown out of work. The cause is said to be lack of transportation to New York. Windsor is rich in minerals. Besides plaster, it possesses valuable beds of limestone. These are being worked up by Mr. H. C. Burchell for fertilizing purposes, our farm lands generally being deficient in this ingredient. Mr. Burchell ascertaining that ground limestone was more active and lasting than calcined lime, erected a mill about three years ago to grind it. His work has proved a great success. His orders are such that he will have to increase the capacity of his mill. Another new industry in the line of conservation is the evaporation plant, that gives a home market for fruit that would otherwise be wasted. Another plant of the same character has been erected at Berwick.

ONTARIO

Alvinston

The flax mill owned by McCall and Company, of Petrolea, was destroyed by fire. Loss, \$10,000. Partially insured.

Aurora

A new company, composed of local and outside capitalists, has been formed to rebuild the Office Bureau Company's plant.

Brantford

The committee appointed by the Brantford Board of Trade to organize a company to build houses suitable for mechanics and other working-men, with a view to selling them on the instalment plan, has for its president Thomas Hendry and as secretary P. T. Knowles. The committee will hold weekly sessions.

Repairs costing \$10,000 are being made to the factory of Monarch Tractors, Limited.

The Dominion Steel Products Company have purchased thirty-five acres of land owned by the Water Commission of Brantford, Ont., at a cost of \$42,500. The erection of one hundred homes for employees of the company will be proceeded with at once and an outlay of \$450,000 is planned on development.

Official announcement has been made of the acceptance of a contract by the Motor Trucks Ltd., of Brantford, for the manufacture of war material for the United States Government. The contract involves an expenditure of approximately \$7,000,000, and the terms call for completion by January 1, 1920.

Bridgeburg

Canadian Allis-Chalmers, Ltd., who are building standard steel freighters here, have had their contract increased from four to six ships. One ship will be ready to launch at an early date.

Caledonia

The Canada Plaster Board Co., head office, 83 Colborne Street, Brantford, will erect a \$20,000 stucco and frame factory. Architect, W. C. Tilley, Temple Building, Brantford.

Chatham

Fire destroyed the machine shop and power house of the munitions plant of Canada Beds, Limited.

Cornwall

A \$25,000 addition is being made to the paper mill of the Toronto Paper Mfg. Co.

Dundas

The Kerr Milling Co. have let the contract for a large reinforced grain elevator to be erected here. The contract covers a 24,000-bushel elevator, consisting of four circular reinforced concrete pockets, 14 feet diameter, 50 feet high, constructed of the Nicholson patented reinforced concrete tile; also underground tunnels, concrete track hopper, elevators, conveyors, distribution system, and miscellaneous equipment, the whole construction being either of reinforced concrete or steel and absolutely fireproof.

Forest

Howard Fraleigh has prepared plans for a \$5,000 addition to his flax mill.

Galt

A three-storey brick addition will be made to the plant of the R. McDougall Co., Chapman Street.

Newlands & Co. contemplate the erection of an addition to their factory, and have bought land for the purpose.

A brick addition will be made to the plant of the Galt Brass Co., Limited.

Hamilton

The plant of the Hamilton Tar and Ammonia Works, Caroline and Mulberry Streets, was damaged by an explosion to the extent of \$25,000.

The Hamilton Brass Manufacturing Company will build a plant on the Frid property, Main Street West. Cost estimated at \$30,000.

C. W. Kirkpatrick, Hamilton, Commissioner of Industries, stated recently that he is now negotiating with twelve American manufacturing companies, who wish to place branch factories in that city. Three are expected to locate there in the next few months.

Kingston

An explosion did serious damage to the cupola in the moulding shop of the Canada Locomotive Co. recently.

Leamington

The Sanitary Product Canners Company contemplate the erection of a canning factory.

London

The T. M. Knowles Co. will rebuild their plant at a cost of \$15,000.

An \$8,000 factory extension will be built by E. Leonard & Sons, York Street.

Plans will be prepared for a \$10,000 factory extension for the London & Petrolea Barrel Co., Simcoe Street. Manager, Mr. Forristal.

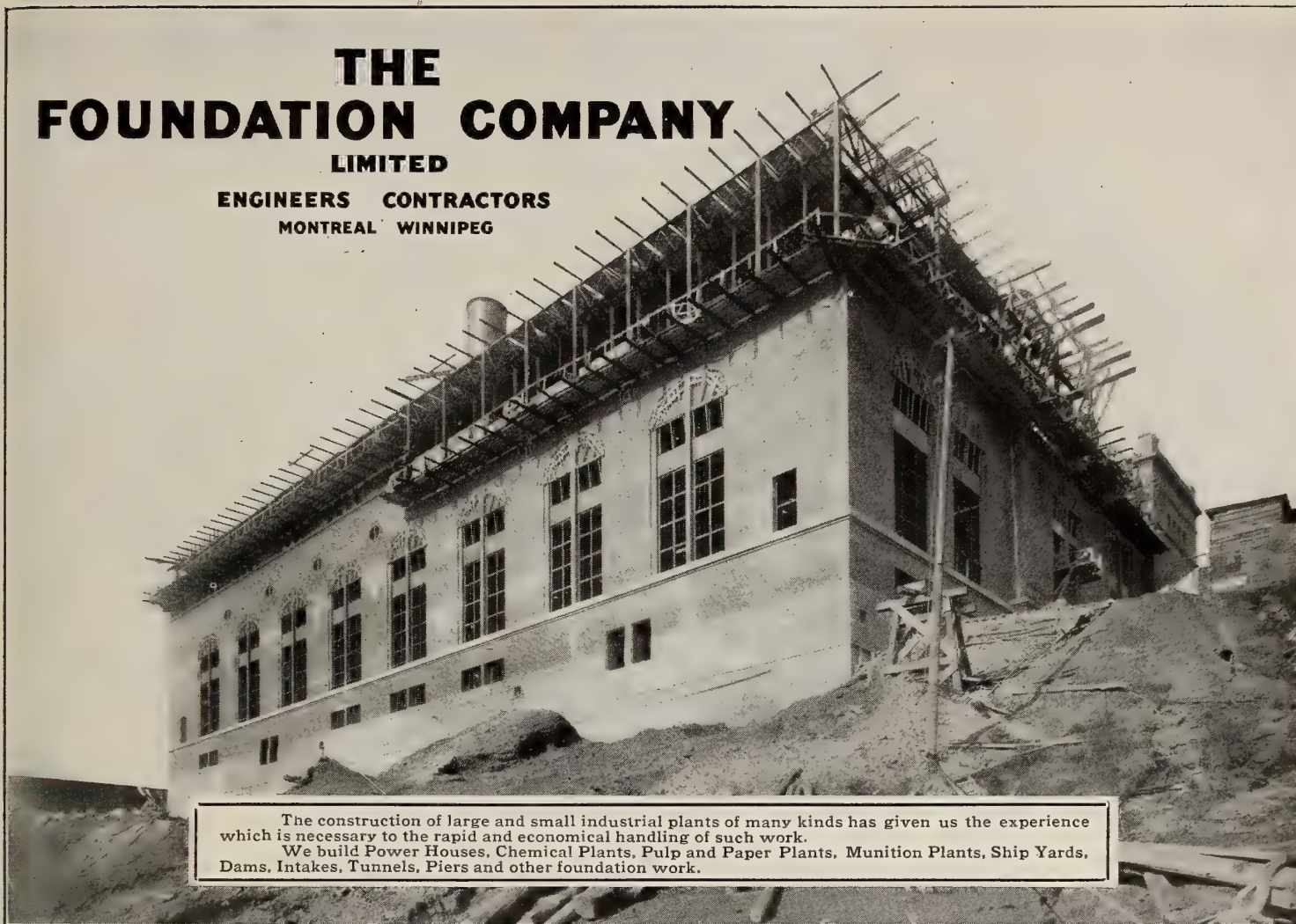
The Hall Glove Co. contemplate the erection of a \$10,000 weaving plant.

Midland

The smelter at Midland, Ont., is to be reconstructed and again put in operation. Cleveland capitalists and a number of local men, including Mr. James Playfair, are interested. A plate mill is also contemplated, together with improvements to the local shipbuilding plant.

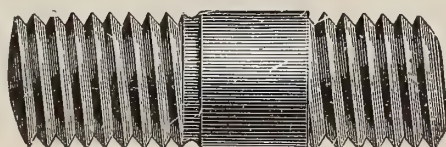
THE FOUNDATION COMPANY LIMITED

ENGINEERS CONTRACTORS
MONTREAL WINNIPEG



The construction of large and small industrial plants of many kinds has given us the experience which is necessary to the rapid and economical handling of such work.
We build Power Houses, Chemical Plants, Pulp and Paper Plants, Munition Plants, Ship Yards, Dams, Intakes, Tunnels, Piers and other foundation work.

Re Twist Drills
and Reamers
High Speed and
Carbon

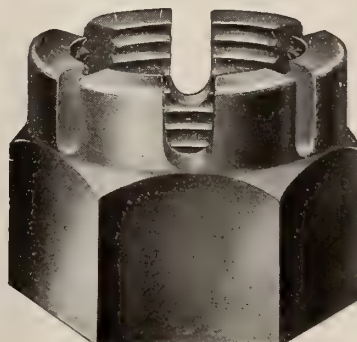
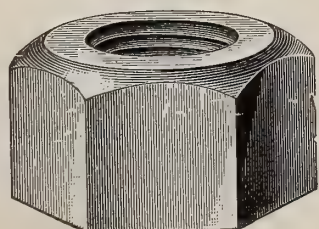


Set Screws
Cap Screws
Semi-Finished
Nuts delivered
from stock

We have recently added to our equipment at Plant No. 3, where these tools are manufactured, and in the near future expect to be able to give prompt deliveries. In the meantime would appreciate it if our customers would anticipate their requirements as much as possible by placing orders with us well in advance of their actual needs.

Always, when wanting good drills, use "Morrow's."

John Morrow Screw and Nut Co.
Limited
INGERSOLL, CANADA



New Hamburg

The North-Light Motor Co., of Toronto, with offices in the Wesley Building, have recently taken over the large two-storey factory at New Hamburg, formerly occupied by the Silversmith Mfg. Co., which is 40 feet by 140 feet long, for the purpose of manufacturing a high-grade, 4-cycle, high speed gasoline motor, for marine, automobiles, trucks, tractors, stationary engines, etc.

Ottawa

The Swift Canadian Co., Ltd., Byward Market, contemplate the erection of a warehouse and packing house.

The Dominion Loose Leaf Co., 174 Wellington Street, will erect a printing plant.

Owen Sound

The Great Lakes Steel Corporation, Limited, head office 22 King Street East, Toronto, have purchased old match factory and intend remodelling building for steel products factory. Manager, J. H. Cole, Owen Sound.

Paris

Changes and alterations costing \$6,000 are being made to the general office building of Penman Co., Limited.

Peterboro

In view of the unforeseen difficulties of the Bonner-Worth Company in securing special machinery for their French spun worsted yarn manufacturing department, the city council has extended the time limit under which the company were to have erected a new building from May 1, 1918, to May 1, 1920. They are now spending \$20,000 on a shipping and reeling room and extensions to the dye house.

The Peterboro Creamery has been incorporated as the Peterboro Milk Products Co., Limited, with G. A. Gillespie as

managing director. The manufacture of condensed milk has been added and special equipment installed for the purpose. T. A. McDonald, late with the Borden Milk Co., is in charge of the condensed milk department. The trade name "Meadowvale" has been adopted for the product.

The Canadian General Electric Co. are reported to be contemplating an expenditure of about \$250,000 on enlargement of their plant.

Point Edward

The Libby, McNeil & Libby Co. have selected a factory site here and will shortly erect a plant.

Sarnia

R. W. Fawcett, 152 Essex Avenue, has been appointed architect, and is preparing plans for two-storey concrete flax mill for the Lindsay-Thompson Flax Company.

Tenders have been called for the erection of a \$15,000 two-storey brick office building for the Sarnia Bridge Company, Limited, 176 North Street.

T. A. G. Gordon, manager of the flax company, states that the flax mill, recently destroyed by fire, will be rebuilt at once.

St. Catharines

A \$45,000 addition will be made to the factory of the McKinnon Dash & Hardware Co., Ontario Street.

A one-storey brick factory building costing \$25,000 will be erected by the Westaway Co., Hamilton.

St. Mary's

Fire destroyed the A. L. McCredie flax mill on April 27, with an estimated loss of \$25,000.

Simcoe

Plans are being prepared for an addition to the plant of Lea Brothers, Culver Street.

Stratford

Fire destroyed the Sebringville Flax Company's plant. Loss on plant about \$15,000. Partially insured.

Thorold

Contract for a \$50,000 addition to the Beaver Board Company's factory has been let.

Tilbury

The Canadian Forging & Socket Co. will open up a manufactory of automobile parts and munitions. The capitalization of the Company is \$250,000. The incorporators are: E. J. Beattie, Detroit; W. J. MacKenzie, Pontiac, Mich.; Gerald McHugh, Windsor; Jas. Foster and E. G. Odette, Tilbury.

FOR SALE A Manufacturing Plant

just cleared and for immediate occupancy, situated in centre of Maritime Provinces on main line of Government Railway, with siding. Supplied with good boiler engine of 40 h.p. Factory and power house of brick. Floor space over 10,000 feet. Prices and terms very reasonable.

**THE NOVA SCOTIA TRUST COMPANY
HALIFAX, NOVA SCOTIA**

JULIUS COHEN & JOSEPHY

*Foreign
Domestic*

WOOL

*Noils, Wastes
and Shoddy*

*Also operating THE YORKSHIRE WOOL STOCK MILLS, TORONTO
Manufacturers of Pulled Shoddies*

H. V. ANDREWS Canadian Representative **13 Church St., Toronto**

Truscon Steel Sash

The Demand of Business —The Answer

BIGGER production and increased demands require top-notch efficiency in man and machine. Truscon Steel Sash is the solution to daylight and ventilation problems. Flooded with daylight, more and better work can be done, and accidents prevented. Proper ventilation assures healthful working conditions—the free exit of fumes as well as influx of pure air.

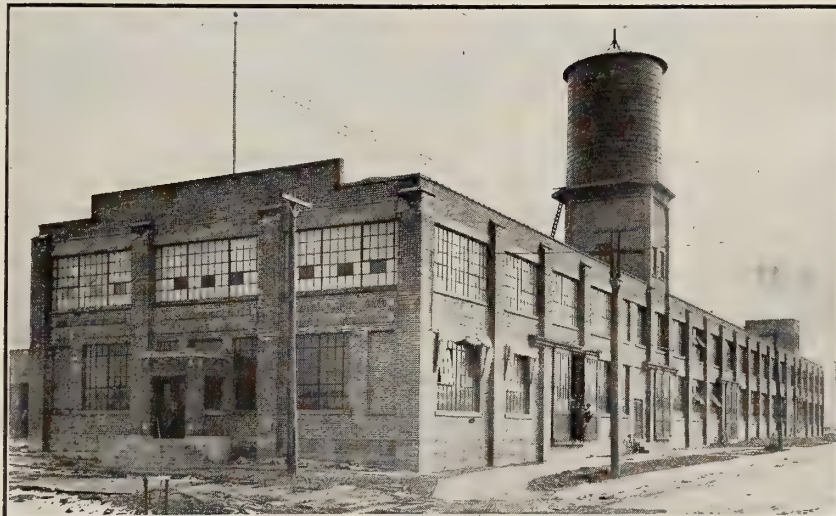


Toronto Branch, FORD MOTOR COMPANY OF CANADA, Limited
Wells & Gray, Contractors John Graham, Architect

TRUSCON Steel Sash. Ventilation is provided by swinging ventilators — an ideal method of supplying pure air.

TRUSCON Steel Sash solves the problem of fire prevention, not only guarding against fires from within, but protecting the building and its contents from possible outside flames and reducing the cost of fire insurance.

TRUSCON Steel Sash is long-lived and represents the maximum of strength and permanency.



KELSEY WHEEL CO., Windsor, Ont.
Wells & Gray, Contractors

No more conclusive evidence of the preference for **TRUSCON Sash** could be desired than is found in its steadily increasing nation-wide use in buildings of every kind. The accompanying illustrations show only a few of the types of structures in which **TRUSCON Steel Sash** is used.



Suburban Warehouse, THE T. EATON CO., Limited, Toronto, Ont.
Wm. Steele & Sons, Architects

The high-grade workmanship of Truscon-Steel Sash is noticeable in its clean-cut lines and attractive appearance. Made of specially rolled high-grade steel, the sections are fitted with mathematical exactness. The size and design of the solid steel sections assure tremendous strength and rigidity against wind pressure or suction from air currents. The sash is given rigid inspection both during the process of manufacture and before shipment.

Truscon representatives, located conveniently throughout Canada, will give personal service to owners, architects, engineers and contractors, as well as co-operate with them fully.

Trussed Concrete Steel Co.

of Canada, Limited

WALKERVILLE, ONTARIO

Montreal Toronto Winnipeg Calgary Vancouver

Truscon BUILDING PRODUCTS

for modern permanent construction cover Reinforced Concrete in all its phases; Steel Window Sash of every type; Metal Lath for Plaster and Stucco; Concrete Highway Reinforcement; Spot Grounds; Waterproofings, etc.

STRUCTURAL STEEL and BRIDGE BUILDERS



We build and erect all kinds of Structural Steel, Bridges, Roof Trusses, Bank and Office Railings, Stair Work, Elevator Grills, Fire Escapes, etc.

Over 5,000 Tons in Stock of
Beams, Column Sections, Angles, Tees, Plates, Bars,
Checkered Floor Plates, etc.

McGregor & McIntyre, Limited
1139 SHAW ST. TORONTO, CAN.

We Do Contract Work

Machine Shop, Blacksmith Shop,
Wood Pattern, Sheet Metal, Planing
Mill, Grey Iron Castings.

Canadian Rumely Co., Limited
48 ABELL STREET
TORONTO



HIGH-CLASS
MADE-IN-CANADA

AIR COMPRESSORS

Send us your
inquiries

HAMILTON MOTOR WORKS, LIMITED
HAMILTON CANADA

Tillsonburg

The Huntley Manufacturing Co. will erect a factory building to replace that lately destroyed by fire.

Toronto

Fire destroyed a warehouse of the Hortop Milling Company, 47 Shaftesbury Ave., and damaged the storehouse of Risburg & Jackson and the North Toronto branch of the Western Canada Flour Mills Company.

A permit has been issued to the Holden-Morgan Thread Miller, Limited, to erect a munition plant on Hillingdon Ave.

A \$40,000 addition to the factory of International Business Machine Co., 270 Dundas St. West, is to be made.

Thomas O. Aked, recently manager of the St. Thomas plant of the Monarch Knitting Co., has organized a company to erect a spinning plant in this city.

Wallaceburg

The Dominion Glass Co. contemplates the erection of a \$200,000 producer gas plant.

Windsor

The Menard Motor Truck Company, 100 London St. W., contemplate the erection of a \$60,000 three-storey brick factory. Manager, Moses L. Menard, 10 Carson Avenue.

A \$60,000 three-storey reinforced concrete factory will be erected by the McGregor, Banwell Co., Walkerville.

Woodstock

Plans are in progress for a factory to be erected on Dundas Street East for the Woodstock Worsted Spinning Company. Superintendent, E. Holden.

City Council contemplate the erection of an \$18,000 factory, which will be operated under the name of the Canadian Hosieries, Limited. Clerk, Jno. Morrison.

Wiaraton

A plant may be established here by the H. J. Heintz Co., Limited, Leamington.

QUEBEC

Beauharnois

A factory will be erected by the Independent Silk Co., Limited, 52 Nazareth St., Montreal.

Grand Mere

Fire destroyed a sawmill here owned by the Laurentide Company, with a loss of \$20,000. The company will rebuild.

Lachine

The Crane Co., 836 North Michigan Ave., Chicago, may erect a manufacturing plant at this point.

Lauzon

Contracts have been let by the Davie Shipbuilding and Repairing Co. for drydock sheds costing \$600,000.

Montreal

Lamontagne, Ltd., propose to erect a new five-storey factory, and have appointed an architect to draw up plans.

Alterations to the value of \$7,200 are being made to the factory of the Acme Glove Works, Limited.



Peters Cartridge Co. Paper Shell Building

Architects:
Van Leyen & Schilling
Detroit, Mich.

We built this building in the fall of 1915. Since that time we have completed four other large contracts. We have lately been awarded contracts on two more large buildings, bringing the total value of buildings erected for the Peters Cartridge Co. to \$760,000.

We aim to do every job in such a manner as will assure us all the building work the owner may require done in the future.

WELLS AND GRAY LIMITED

ENGINEERS AND CONTRACTORS

Branch Office:

Bank of Commerce Building
Windsor, Ont.

701 Confederation Life Building
Toronto, Ont.

COMBINATION LINK-BELT

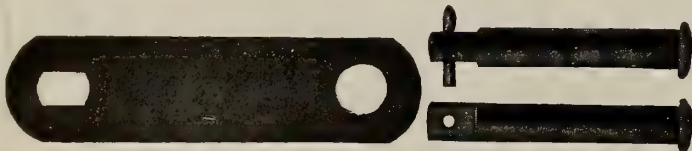
"C" Class

for Elevating and Conveying

STRENGTH and low cost are combined in "C" Class Link-Belt. It is well established as a durable Link-Belt for elevating and conveying.



Length of life in service is increased by preventing motion between the pin and the side bars which hold it. The joints are accurately fitted to the side bars. A flat portion is milled accurately at the end of the pin, fitting into a carefully broached hole in the side bar. Obviously, this construction is superior to forged lugs or necks under the head to hold the pin in place.



"C" Class Link-Belt is preferred because of:

- 1—The pin construction.
- 2—High tensile strength in pins and side bars.
- 3—Cast centre links are made of the best grade of malleable iron for durability and strength.
- 4—The pin holes in the heads of the links are cored smooth and clean. A durable joint results.
- 5—Accurate pitch and small clearances are assured by accurately made patterns and dies.
- 6—Close-fitting joints keep out gritty material, and lengthen the life of the Link-Belt.

Write for Folder No. 306, which gives particulars regarding "C" Class Link Belt. Our experienced engineers offer their services in solving your problems in elevating, conveying and power transmission.

CANADIAN LINK-BELT CO., LTD.

Manufacturing Plant and Offices at
265 WEST WELLINGTON ST.
TORONTO

An \$8,000 addition is being made to the factory of the Major Mfg. Co., Limited, 314 St. Antoine St.

The Canada Casing Co., Limited, 750 St. Paul St. West, are erecting a new \$26,000 factory.

Canadian Allis-Chalmers, Ltd., have taken out a building permit for a \$25,000 foundry extension at their Rockfield works near here. The construction will be brick, concrete and steel, and will be in charge of the company's bridge department.

A \$25,000 two-storey brick factory will be built by Darling Bros., Limited, 120 Prince Street.

An extension is being made to the foundry of the Montreal Locomotive Works, Limited, 145 St. James Street.

Pointe aux Trembles

An office and factory building costing \$20,000 will be erected by the Home Cigar Co., Limited.

St. Hyacinthe

An addition will be made to the factory of L. O. Grothe, Limited, 556 St. Lawrence Bldg., Montreal.

Three Rivers

The Three Rivers Shipyard Co. are erecting a two-storey frame warehouse and smith shop to cost \$14,000.

Victoriaville

The main plant of the Victoriaville Foundry was destroyed by fire, with a loss of \$15,000.

SASKATCHEWAN

Regina

The P. Burns Co., of Calgary, has purchased the abattoir of the Hugh Armour Co., here, and purposes to enlarge the plant.

A Fortune in Flying Chips

How Recovery of Bits of Metal Thrown Off by Machines Will Add to Companies' Profits

The machining of metal parts of any description cannot be done without a certain loss of metal by the chips flying off during the work. This loss, in the case of high-priced metals, adds considerably to the price of the article made from the material in question. To reduce the loss, a good many methods have been suggested, by most of which it is tried to collect the flying chips, so that they can be remelted. Even this, however, very often is only possible under great difficulties, and it is estimated that millions of dollars yearly are lost to the nation from this source alone. For instance, the aluminum chips coming off while machining aluminum castings for automobile gear boxes total in value more than \$3,000,000 annually. In former times nearly 50 per cent. of these aluminum chips were simply thrown away. Now it has become possible to recover a large percentage of the metal by remelting, and the actual loss has been reduced to approximately 20 per cent., and there are firms who confess to recover even more of the metal. By doing so approximately \$2,500,000 have been added to the yearly income of the United States. Here is a chance for machine shop managers to increase the earnings of their plants by making use of what formerly was thrown away.—*Scientific American*.

Announcement

NOW MADE IN CANADA

COPPER

HOT AND COLD ROLLED

SHEETS—ROLLS

STRIPS—PLATES

ANODES

BUS BAR

RODS

Made in any width up to 66 inches, in all tempers for roofing, blanking, deep drawing, spinning. Accurate to gauge and highly finished.

PROMPT DELIVERIES

**Brown's Copper & Brass Rolling
Mills, Limited**

NEW TORONTO (Near Toronto)

Good Things from Other Magazines

The President to the Salesman

How Letters Specially Written by the President of a Company to the Salesmen Individually Keep Up the Enthusiasm of the Latter, and Prevent Them from Becoming Discouraged

By GUS. H. DIRHOLD
(Reprinted from "Advertising & Selling")

The strongest and most successful ally the sales manager can have is the president's personal co-operation to keep the salesman "gingered up." As every sales manager knows, very often the president is called upon to write letters for reasons of strategy, the main idea being that the president's signature to a letter will be more forceful than that of the sales manager. Very often, in some instances too often, these letters are little better than fakes. They are sent out, rubber stamped with the president's facsimile signature; in fact, the president never sees them and therefore they lack the necessary personal element which makes a letter of this nature convincing enough to call for the proper response from the man on the firing line.

This particular sales manager has found it of the greatest help to have a "work up" made of the salesmen's route in conferring with the president and from which the latter selects the facts he wishes to drive home. This "work up" would give the purchases of each customer for a period of

years. It would give the rating and character of his business. It would also contain a memorandum from the credit department showing how the customer paid.

Salesman Knows Little About His Accounts

On analysis it has been found surprising how little a salesman knows about how the accounts are running in his territory. He does not seem to know how much he is selling to each dealer, or whether the accounts are increasing or decreasing. Then the average salesman does not seem to know, or is not keeping track of the lines of goods he is selling or not selling to his customers.

It has been found by experience that such training is excellent for the salesman. Having someone check him back, he in turn acquires the habit of checking himself back. He no longer sells by guess. He keeps a memorandum of his sales, of certain lines of seasonable goods. When he begins to realize he is not selling certain lines, he inquires into the reasons, and if by any chance the house is wrong, or not down to the minute on terms, goods and prices, the sales manager will soon hear about it and either rectify conditions or post the salesman accordingly.

With the aid of the "work up" the sales manager is in a position to take up the matter intelligently with his salesman. He can tell him, for instance, that there is an opportunity to open a new account, if it is shown that the old

Cable Address, "Therson," Toronto

Telephone Main 2862

THOMSON, TILLEY & JOHNSTON

BARRISTERS, SOLICITORS, etc.

D. E. THOMSON, K.C.

STRACHAN JOHNSTON, K.C.

W. N. TILLEY, K.C.

ARTHUR J. THOMSON

R. H. PARMENTER

SOLICITORS FOR THE CANADIAN MANUFACTURERS' ASSOCIATION

Offices—Toronto General Trusts Building
85 Bay Street

TORONTO
Canada

ARE YOUR STEAM PIPES INSULATED?

IF NOT YOU ARE BURNING MONEY

A GOOD COVERING

pays for itself in one Season, and is a revenue producer indefinitely. The Best is the Cheapest

WE HAVE IT

EUREKA MINERAL WOOL & ASBESTOS COMPANY

118 ADELAIDE STREET WEST, TORONTO, ONTARIO

**FOR
HIGH
SPEED**



**FOR
HEAVY
PRESSURE**

For Cool Bearings

WHEN YOU PURCHASE

ARCTIC METAL

You get a product of long experience and 100 per cent. value

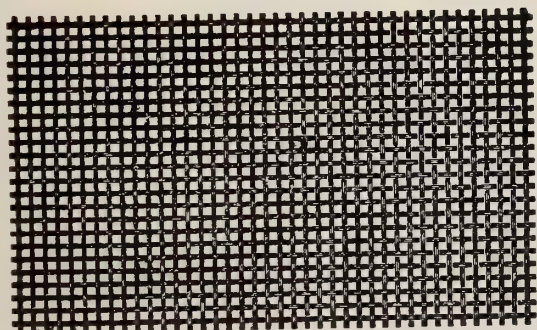
Manufactured and Guaranteed by

Tallman Brass & Metal Co.
HAMILTON, ONT.

GREENING'S

Wire Cloth

Wire Screening



**All grades of Wire Cloth, Double
Crimped.**

**Screening Accuracy Guaranteed.
Made of Steel, Copper or Brass.
Galvanized and Tinned Cloth.**

Perforated Metals

Wire Rope

MANUFACTURED BY

THE B. GREENING WIRE CO., Limited
HAMILTON, ONT. : : MONTREAL, QUE.

account is decreasing. He can point out and show the salesman the lines of goods the old customer is not buying. He can then ask the salesman frankly what he thinks of the situation—if it is not right and fair, as the old customer is scattering his purchases and buying only certain lines from the house, that the house in turn should be free to sell goods to other merchants.

The modern sales manager, to be a real success, must deal in men as they are. He soon learns that he cannot make over men to suit his own particular ideals. By the same token the sales manager who can get a good salesman to sell more goods certainly has the ability to show and coach a poor salesman how to sell more goods. It has been demonstrated over and over that a poor salesman can be made to sell more goods by careful instruction in the various lines his house sells, by urging the constant or frequent carrying of samples and by careful watchfulness and by earnest, sincere supervision. But the good salesmen, the ones upon whom the house depends for larger dividends—the real meat salesmen—have to be handled differently.

As a general proposition these real salesmen work hard, they know their lines and in many cases they know as much about the goods and how to sell them as the sales manager himself, if not more. To show these good salesmen how, and to get them to put forth still greater efforts to sell more goods, taxes the ingenuity of all sales managers, and it is at this crucial point that the president's letter can best be brought to bear, to bring about the desired result.

Samples of Letters to Salesmen

For example, here is an abstract from a letter written to a young recruit which may be classed as Homeric. The advantage of a letter of this character lies in the fact that while it is in itself a direct suggestion, as a rule, it does

not irritate a salesman as a personal letter would. Yet it embraces every minor thought out detail—route, percentage, sales are clear before you, and the note of satisfaction with which he ends comes to the perturbed salesman like a personal confidence:

"You have been brought to my attention because I am interested in your work and hope to have you be successful, but thus far you have not demonstrated any marked ability as a salesman. The route now assigned to you, we believe, should yield about \$25,000 sales the first year. Whether you can do this or not remains to be seen. From January 1st until March 20th you sold 123 orders, the total sum of which was \$3,250, and the gross profits on which were not quite \$500. Analyzing your work, we sum it up as follows:

"Your percentage is entirely satisfactory—just about right—but less than that would be unsatisfactory. Your sales are very small indeed—too small to pay expenses. However, we do not criticize you for that because you did not have a fair show—you had no regular route—but now that you have one it rests with you to demonstrate your ability to handle it.

"Up to this time we are impressed with the idea that you are what we call a 'Short Horn.' When a man starts with us, we size him up rather quickly. There are only two classes—the 'Short Horn' and the 'Long Horn'—and we very soon put a new man either in one class or the other in our minds. A 'Short Horn' is a man who takes short orders, and with many people it seems bred in the bone—it just comes natural—it is not because they try, it is simply because it is the nature of the man. The other class, or the 'Long Horn,' have the faculty of taking long orders, and it comes just as natural to them to do that as it does for the 'Short Horn' to take short orders. The 'Short Horn'

PEDLAR'S FERRO-DOVETAIL PLATES

The Acid-Proof Roof

Steel, when protected on every side, by plaster or cement, can never deteriorate. And when Pedlar's Ferro-Dovetail Plates are used, you get just such a result.

For roof work the plates are concreted above and plastered beneath. Neither the cement, nor the plaster, bonded and reinforced by the lateral, dovetail-shape corrugations, can disintegrate or fall off. And the steel, thus protected by the cement and the plaster, has no calculable limit of durability.

WRITE FOR FERRO-DOVETAIL
BOOKLET I. C.

The Pedlar People Limited

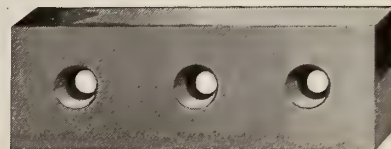
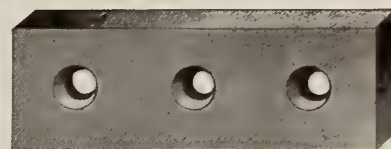
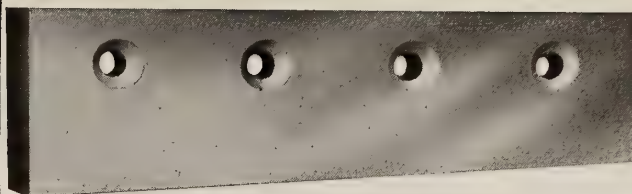
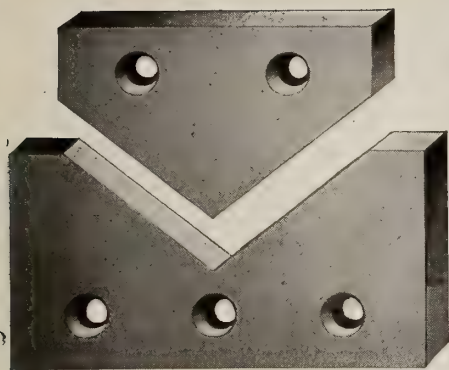
Established 1861

Executive Offices and Factories

OSHAWA, ONT.

Branches at Montreal, Ottawa, Toronto, London,
Winnipeg, Vancouver.





Metal-Cutting Shear Blades

GALT KNIFE CO.

GALT Limited ONT.

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Toronto, Ontario

Mr. Manufacturer:—

Are you sincere in your desire to boost and make greater the British Empire by the buying of Canadian made goods? If so, look over the following list of high-grade oils, greases, compounds and paints manufactured in our oil refinery at Petrolia and our paint works at Toronto, Ontario. A postal card from you will bring you full information regarding the goods in which you are interested.

CYLINDER OIL

ENGINE OIL

MACHINE OIL

DYNAMO OIL

TANNER'S OIL

BLACK

LEATHER OIL

PARAFFINE
WAX

MINERAL
SOAP STOCK

BENZINE



WHITE LEAD

READY MIXED
PAINT

COLORS IN
OIL

VARNISHES

BLACK
JAPANS

STEEL BRIDGE
PAINTS

ROOFING
PAINTS

CUP GREASE

LINSEED OIL
SOAP

Power and Labor Cost Less

—IN—

PETERBOROUGH

—ONTARIO—

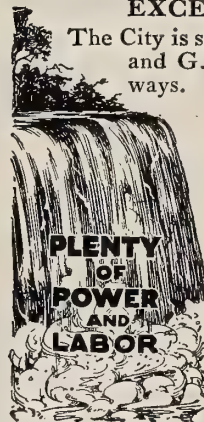
ARE you paying too much for electricity? Peterborough owns its Hydro-Electric System and sells at cost.

Is your power unreliable? Peterborough has emergency reserve lines.

Is Labor scarce, costly and unsettled? Our Manufacturers have been remarkably free from labor troubles, and have not had trouble in procuring labor of all classes. Peterborough is a City of home-owners, where living expense is low, Wages according.

Are freights too big an item with you? Peterborough offers

EXCELLENT TRANSPORTATION



The City is situated on the main highways of the C.P.R. and G.T.R., and connected by canals with Waterways. It is the centre of Canada's population, between Montreal and Toronto, thus enabling you to reduce mileage to the minimum for national distribution.

MANUFACTURERS INVITED

There are over sixty factories in Peterborough to-day, the largest employing 2,000 hands. The City offers every encouragement to Manufacturers and is holding a number of choice sites alongside railways. For further particulars, write, telegraph or telephone to

The City Clerk, Peterborough
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Chemical Fire Engines

For Factory-Village-City. Capacities 20, 40, 50, 70 Gal.

OUR "JUNIOR" 40 GAL. ENGINE WITH MANY IMPROVEMENTS OVER THE ORDINARY TYPE, SELLS AT \$150.00

The R. S. BICKLE COMPANY

WINNIPEG MONTREAL QUEBEC

ADDRESS ENQUIRIES TO HEAD OFFICE, WOODSTOCK

EXPORTERS OF

Reed Organs, Piano Stools,
Music Cabinets.

Catalogue B.



The Goderich Organ Co. Limited
GODERICH, CANADA



Closet Seats,
Flush Tanks,
Medicine Cabinets,
Everything for the Bathroom.

Write for Catalogue C and Price List.

salesman is never profitable; therefore, you want to get out of that class and get into the other just as soon as possible.

"Do not ask a man what he wants. The salesman who does that is a failure. I want you to try and acquire the knack of telling a customer what he wants—search out with your eyes his stock from floor to ceiling—cultivate the faculty of grasping his wants quickly.

"I understand that you have been with H. B. Meyer, and I cannot give you a better example to follow than he is. He is a first-class salesman. He knows 'how to do it.' If you will sell as much as he did in the towns that are assigned to you, which he formerly visited, notwithstanding you ought to visit them twice where he visited them once, we will be perfectly satisfied with your results for the first year.

"One thing is absolutely essential, and that is that you should learn enough about business to be able to give a man a price on leading goods, which are commonly asked for every day, without reference to your catalogue—I mean net prices. My advice to you would be to avoid lists and discounts as much as possible. For example, let me ask you now—suppose a man would say to you, 'Mr. Jones, what is your price on No. 9. Galvanized Pails?' If you can come back at him as quickly as an echo and say, '\$2.25 per dozen,' then you have my idea, and if you cannot, you have not grasped my idea. A salesman came to me the other day and asked me to tell him why he was unsuccessful. I said, 'What is your price on 10-inch Mill Files, net?' His answer was, 'I don't know, 70 off.' I replied to that, 'What is the list?' He said, 'I don't know.' I asked him the price of 3-inch Wrought Butts net. He could not answer me and I asked him the price of a few other small things, and he could not give it to me on any of them.

"I am sure, however, that you are fully competent to do

this, and I think this letter will possibly be the means of opening up a new line of thought—at any rate, I hope so."

There are a good many very excellent salesmen who, in their actual experience, have learned about all the books teach, and have put it into practice. But that doesn't settle the problem of salesmanship.

As an example of letter tact take this abstract sent to an "old guard" salesman, a man who grew up in the business and was written in order to give him the value of the stimulus of a different viewpoint in selling goods on his territory, outside of his regular trade:

"In writing you about your business, I want you to understand, first, that your work is always satisfactory to me and, taken as a whole, it is first-class, but I am interested in you. You are a 'free lance'; you stand straight, your toes square to the front, ready to welcome a friend or fight a foe—just the kind of man I like—but I think you are doing yourself and the Brown family an injustice by not making, or by not averaging, a larger percentage of sales. That I am sure you could do if you would simply change your methods a little bit; if you were more deliberate and a little closer student of human nature.

"Your average is about 17 per cent. for the year; it ought to be, my good friend, 20 per cent. Now, because you are doing well, it isn't any reason why you shouldn't do better. Please, understand me, I am writing you now for Brown and not for this company. I want you to make a whole lot of 'velvet,' and I think you can do it, if you can just get my 'specs' on your nose—therefore, I offer the following suggestion to you:

"Don't rush too much with your work—in a certain sense don't force business and every once in a while tire yourself out so that you have to go out of commission for repairs—

The HAMILTON BRIDGE WORKS CO. Limited

HAMILTON, - ONTARIO

ENGINEERS, MANUFACTURERS and CONTRACTORS



The above is a building recently erected for the Steel Company of Canada at Hamilton, Ontario.

Steel Railway Bridges
Steel Highway Bridges
Steel Buildings
Steel for Ships
Steel Turntables
Steel Trusses and Columns

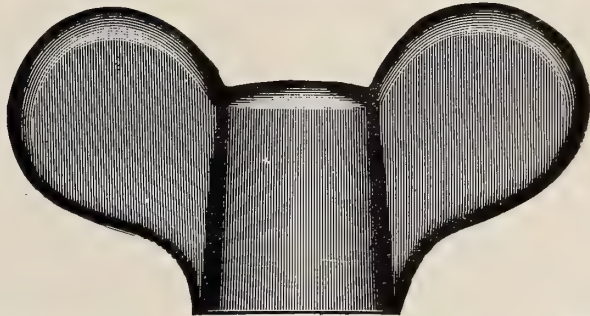
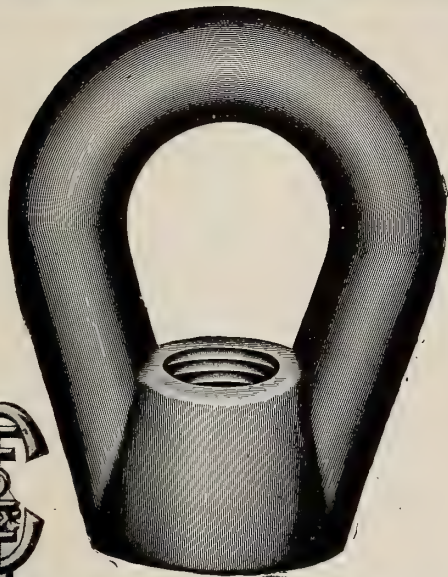
Capacity 36,000 tons

5,000 tons of Standard Shapes of Structural Material in our yards for immediate shipment.

Enquiries Solicited

CANADA FOUNDRIES & FORGINGS LIMITED

DROP FORGED STEEL



EYE NUTS AND THUMB NUTS
Sold by the Thousand

Produced at
CANADIAN BILLINGS & SPENCER PLANT
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ECONOMY

Rapid production is dependent on the use of
ECONOMICAL TOOLS AND STEEL. It is
safer *not* to specify High Speed Steel, but

Demand "Tyr," the Economy Steel
MADE IN CANADA

ARMSTRONG, WHITWORTH OF CANADA
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Offices, 22 Victoria Square, Montreal

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WORKS, LONGUEUIL, P.Q.

THE CANADIAN BRIDGE CO., Limited WALKERVILLE, ONTARIO

Montreal Office: New Birks Building

MANUFACTURERS

RAILWAY AND HIGHWAY BRIDGES

Locomotive Turn Tables. Roofs, Steel Buildings and
Structural Iron Work of all Descriptions

have a day or so to rest up. I mean by that, that you are not in the proper frame of mind or body to carefully consider each town on its merits in point of sales as you make it.

"I don't want you to take this letter in any sense of the word as a complaint. I wouldn't write it if I thought you would—I believe you know me too well to think for a minute there is anything under cover. I am like yourself—what I have to say, I say it squarely, frankly and perhaps sometimes bluntly. I am writing almost entirely in your own interest, as I believe if you will look at this thing as I do you would be better off at the end of the year, and you wouldn't need so much life insurance to take care of your family when the Good Lord calls you home."

This is the text of a letter sent to a salesman, practically a new man on the territory, that possesses actual "news interest," a good letter full of "how and why" copy, a letter that presents facts, forces action and so produces results:

"Your letter of the 16th inst., in answer to the one the President wrote you on percentage during my absence, came duly to hand, and I want to say to you frankly that it pleased me very much and simply confirmed my idea of you, which is that you always want to, and try to, co-operate with us in every way possible—that you are enthusiastic and loyal, and I assure you it was a pleasure to have you tell me so plainly that you would be glad to have help and have our ideas as to your work as we see it through our 'specs.'

"I am going to write this letter in a most good-natured way and do it for your good, or, I might say, for the good of both yourself and us and the benefit of our joint pocket-books. I hope you will not take offence at anything I say, and take it in the same way that you did the President's letter.

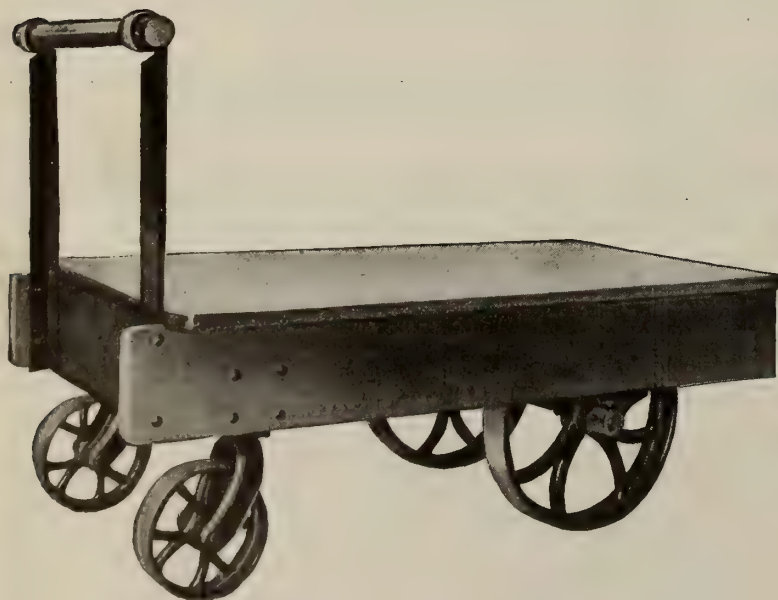
"I have looked pretty thoroughly over all of your work for this year. I find that in the month of March you sold only four orders during the entire month which exceeded \$100. Do you begin to catch the idea of what I mean? In April, which was the largest month you had this year, you improved a great deal in this respect, selling eight general orders exceeding \$100, besides two small new stocks—one of \$302 and one of \$357. June, of course, was a short month with us all. At the same time you sold but three orders in that entire month, which exceeded \$100, and only eleven orders (including the above) which exceeded \$50.

"There may be two or three reasons why you do not sell longer bills. One is, you may travel in too big a hurry—you may always be in a hurry to 'catch a train.' You may go into a town, say, at ten o'clock in the morning, figure on selling two or three merchants, and getting out at half-past two in the afternoon. You may be more or less in the habit of taking the items on the 'Want Book'—glancing around the store and getting what shorts are in sight, and calling that a 'completed job.' Now, friend Williams, I don't know for sure which of these habits you are in. I couldn't take my oath that you do any of them habitually, but if you do, you will recognize which one you do the most by calling the matter to your attention, and if you feel 'guilty,' as you read the above, and think there may possibly be some truth in some of these statements, this letter will not have been in vain.

"Think this over carefully and remember we have every confidence in you and your ability to put it over. If I can help you in any way, just 'push my button'."

THE W. S. MAHAFFY CO. TORONTO, CANADA

PUT IT ON WHEELS



Warehouse Platform Truck

SIZE	A	B	C	D
Length of Platform	4 ft. 0 in.	4 ft. 6 in.	5 ft. 0 in.	5 ft. 0 in.
Length over all	4 ft. 3 in.	4 ft. 9 in.	5 ft. 3 in.	5 ft. 3 in.
Width of Platform	2 ft. 2 in.	2 ft. 6 in.	3 ft. 0 in.	2 ft. 6 in.
Height from Floor	18 in.	18 in.	18 in.	18 in.

Load 2000 lbs.

Wheels 8 in. and 16 in.

Finish { Wood—Varnish
Iron—Black

Style No. 370

A very easy running Truck for heavy work.

Wheels have wide tread with crowned face to protect floors.

This is a reproduction of a page from our catalog

THE W. S. MAHAFFY CO., Manufacturers of Factory and Warehouse Trucks

2 Trafalgar Avenue - - - Toronto, Canada

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Faulty firing practices, poor firebox construction, bad draft regulation and other leaks are daily lowering your boiler efficiency.

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OUR COMBUSTION ENGINEERS

can effect economies in your boiler room. They are constantly remedying such defects and effecting savings that yield dividends on the investment for their services.

Have our engineers go thoroughly into your boiler-room problems.

The Largest and Best Equipped Commercial Laboratory in Canada

MILTON HERSEY COMPANY LIMITED

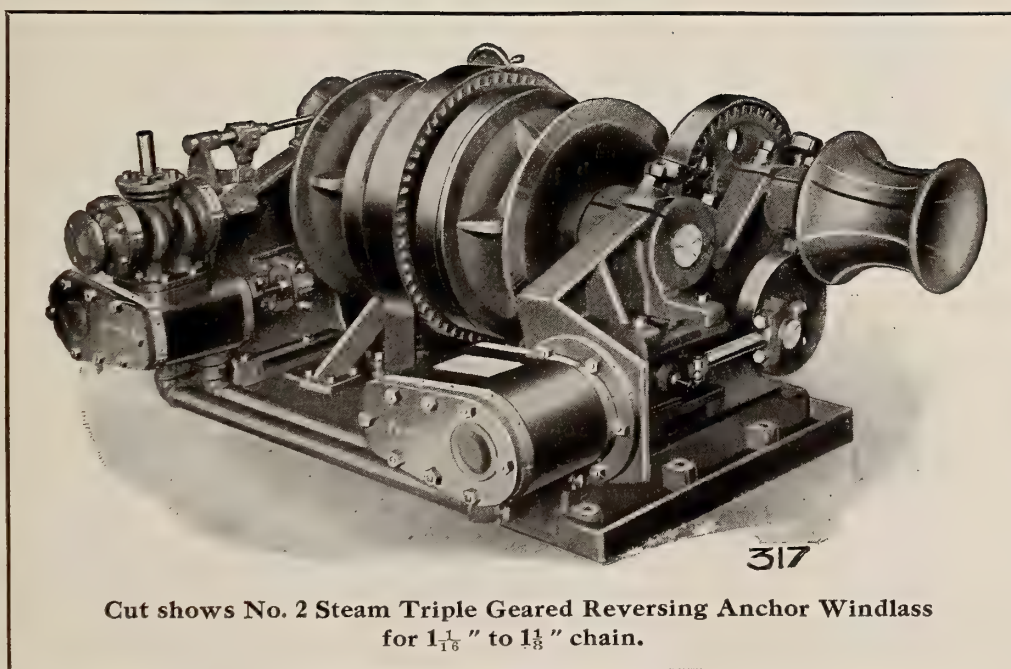
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Manufacture the
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ANCHOR WINDLASSES



Cut shows No. 2 Steam Triple Geared Reversing Anchor Windlass
for $1\frac{1}{8}$ " to $1\frac{1}{2}$ " chain.

Steering-Engines
Cargo-Winches

Which have stood the
Test of 50 YEARS

Propeller Wheels
Largest Stock in
Canada.

Steel Castings

ESTABLISHED 1860

Manufactured by

The Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.

After the War

**United States Writer Holds that Entrance of His Country
Into the War Would be a Colossal Blunder if it
Meant Surrender of Independence and
Nationality to a League of Free
Trade Nations**

By EDWARD N. DINGLEY
(Reprinted from "The Protectionist")

Recently there has arisen more or less confusion as to why the United States is in this Great War. President Wilson epitomized the situation in his epigrammatic statement: "To make the world safe for democracy." Yet at the end of the first year of America's participation in the conflict, there are evidences of misapprehension as to the real consequences of this declaration. Democracy in Russia means radical socialism. When President Wilson sent a message on March 14 to the Congress of Soviets in Moscow, he said: "May I not take advantage of the Congress of Soviets to express the sincere sympathy which the people of the United States feel for the Russian people at this moment. . . . The whole heart of the people of the United States is with the people of Russia in the attempt to free themselves forever from autocratic government and become masters of their own life." The reply from the Russian Congress of the Soviets contained these words:

"The Congress [of Soviets] expresses its gratitude to the American people, above all to the laboring and exploited classes of the United States, for the sympathy expressed to the Russian people by President Wilson, through the Congress of Soviets, in the days of severe trials. The Russian Socialistic Federative Republic of Soviets takes advantage of President Wilson's communication to express to all peoples perishing and suffering from the horrors of imperialistic war, its warm sympathy and firm belief that the happy time is not far distant when the laboring masses of all countries will throw off the yoke of capitalism and will establish a socialistic state of society, which alone is capable of securing just and lasting peace, as well as the culture and well-being of all laboring people."

Is it any wonder that Senator Poindexter in the United States Senate strongly disapproved of the message of sympathy, intimating that the sending of such a message, or anything that savored of compromise with the Bolsheviks, would be used by elements in this country to exploit doctrines of internationalism which at this time cannot take the place of national pride and patriotic endeavor."

Japanese statesmen are already alarmed over the effect a "democratic" war may have on the political institutions of Japan, founded on imperialism. Some English statesmen also are alarmed over these "democratic" tendencies.

Battle Against Capitalism

It cannot be denied that "to make the world safe for democracy" is seized by the radical socialists in every land, as a tremendous gain in the battle against capitalism. In a recent address before the League for Democratic Control, Harold J. Laski, an instructor in the department of history and economics at Harvard, declared that "the capitalistic system should be overthrown and the tools of production placed in the hands of the workers. There can be no real democracy until the workers gain economic power."

Hon. Charles E. Hughes, former Justice of the United States Supreme Court, said in a recent address: "America entered the war because it is essential to our safety that the pretensions of brute force should be defeated, and because this nation cannot live in peace and security unless there is established among the nations the reign of law." These are true words; yet behind the sinking of the Lusitania, behind the

freedom of the seas, behind the struggle for human justice and Christian righteousness, behind the cry of "democracy against autocracy," is the real cause of the war—the economic cause. It is a war in which four great nations are now fighting to prevent the domination of Germany over the economic and commercial forces of the world. At first it was a struggle between "democracy and autocracy." It is now a struggle between nations for economic supremacy.

The British Labor Party

The program of the radical British Labor party involves (1) universal enforcement of the national minimum; (2) democratic control of industries; (3) revolution of national finance; (4) the surplus wealth for the common good. The British Labor party is not only a semi-socialist party, but a free trade party. Its platform says: "The British Labor movement declares against all projects of Imperialists and capitalists for economic wars, whether by protective tariffs or capitalistic trusts or monopolies. They inevitably result in the spoliation of the working-classes for the profits of the capitalists." On the contrary, the American Federation of Labor, in convention at Buffalo, declared: "That this convention go on record in favor of a policy of industrial preparedness and the enactment of laws by Congress that will adequately protect all wage-earners of our country against the loss of employment through any industrial invasion on the part of the products of any of the other nations." However, on February 17, the Executive Council of the American Federation of Labor stated: "This is labor's war. It must be won by labor. . . . We regret that circumstances make impossible continued close personal relations between the workers of American and those of the Allied countries. . . . We ask the workers of Russia to make common cause with us, for our purpose is their purpose." What the real purpose is, can be seen in the reply of the Russian Soviets to President Wilson.

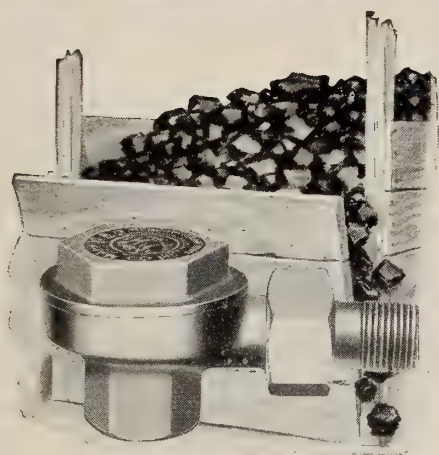
Legislation in England, France and the United States in the direction of governmental socialism, and defended as war measures, is cited to support socialistic attack of the British upon the established economic system. In fact, President Wilson's method of procedure in the conduct of the war has strengthened the hand of the socialists and made possible an economic experiment after the war, that will endanger the very life of the nation.

President Wilson seems to yield to this socialist tendency the more readily because of his own economic ideas and theories of government. His doctrine of free trade, or "new freedom," his belief in a theoretical economic international peace, his preaching about a brotherhood of nations, and his sympathy for the Russian Bolsheviks, all harmonize with and encourage the conflict between the established system and revolutionary experiments.

The Social Unrest

Wise business men and statesmen recognize an existing social unrest; that phenomenon is not new. The evils of concentrated fortunes, of monopoly, of selfish aristocracy, of occasional corporate mismanagement, are failings of human nature that have existed from the day Jesus drove the money-changers from the temple to the present hour. The ideal form of government has not yet been reached, and democracy is still an experiment; but the goal will never be reached unless the mistakes of the past are viewed as guides for the future.

A certain Japanese statesman has said recently that the end of the present war will be the end of our present civilization, which, he says, has proved a failure. Not a few publicists entertain the thought that perhaps our whole



The Check on the Coal Bin

Where radiators are equipped with Dunham Radiator Traps there is a constant, dependable check on the coal bin. The Dunham Radiator Trap saves coal from being wasted. It gets every last bit of heat out of the fuel. It is more than doing its share in helping the Dominion save millions of tons of coal this year.

The Dunham Radiator Trap is a *Proved* Engineering Success

It is well and favorably known to architects, heating engineers and contractors, and steamfitters all over the country. It is manufactured by a company with an enviable reputation for pioneering the principle now utilized in the best heating systems that engineering skill can produce.

The Dunham Radiator Trap provides an opportunity which every industrial plant should take advantage of. To help overcome the fuel shortage which is going to be so acute next winter and also to cut down operating expenses—the application of Dunham Radiator Traps to your heating system will accomplish wonderful results.

By equipping your coal-wasting heating system with Dunham Radiator Traps you can convert it into a coal-saving equipment.

This means dollars saved for you and coal saved for the Country's war needs.

Write for full information about the Dunham Heating Service and about the Inspection Service we maintain for heating engineers, contractors and all users of steam for heating purposes.

The DUNHAM
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C. A. DUNHAM COMPANY, Ltd.
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Halifax, Montreal, Ottawa, Winnipeg, Vancouver, Calgary

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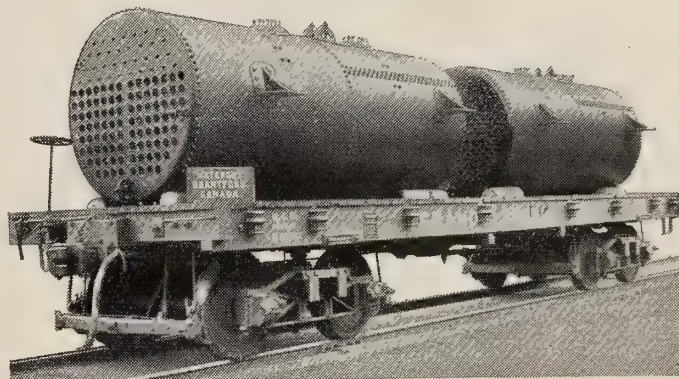
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BOILERS IN STOCK FOR IMMEDIATE SHIPMENT

2—48" x 14' 3—54" x 14'
7—60" x 14' 5—72" x 18'

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The Waterous Engine Works Co., Ltd. BRANTFORD CANADA

BUTTERFIELD TAPS



"You can always rely on them to give the best and the longest service." That's what hundreds of skilled mechanics and purchasing agents say.

For Shell Work

Butterfield Taps have been proving their high efficiency every day since the first shell contract was placed in Canada.

For fast work, complete accuracy and long service get Butterfield Taps.

Butterfield & Co., Inc.
ROCK ISLAND, QUE.

scheme of things is wrong, and that our social and industrial structure must fall of its own weight, after the war. I do not believe it. It is not conceivable that the nineteen hundred years of Christianity, to say nothing of the centuries of ethical teaching preceding, have all been lost, and that the only price of peace is a complete sacrifice of the efforts of humanity during the past. If the world is lost, if civilization is a failure, there is nothing but chaos ahead; and surely some of the antidotes advanced to cure the ills of to-day point straight to chaos.

The heroic sacrifices now being made by the sons of America in the cause of freedom and justice, and for national protection; the vast sums of money laid on the altar of humanity, glowing tributes to the spirit and the soul of the Republic, are proofs that modern civilization is not dead and American institutions are not lost. While endeavoring to cure our social and industrial ills, let us not kill the body that possesses such nobility and such divine powers. It is a mistake to burn the house to stop a leak.

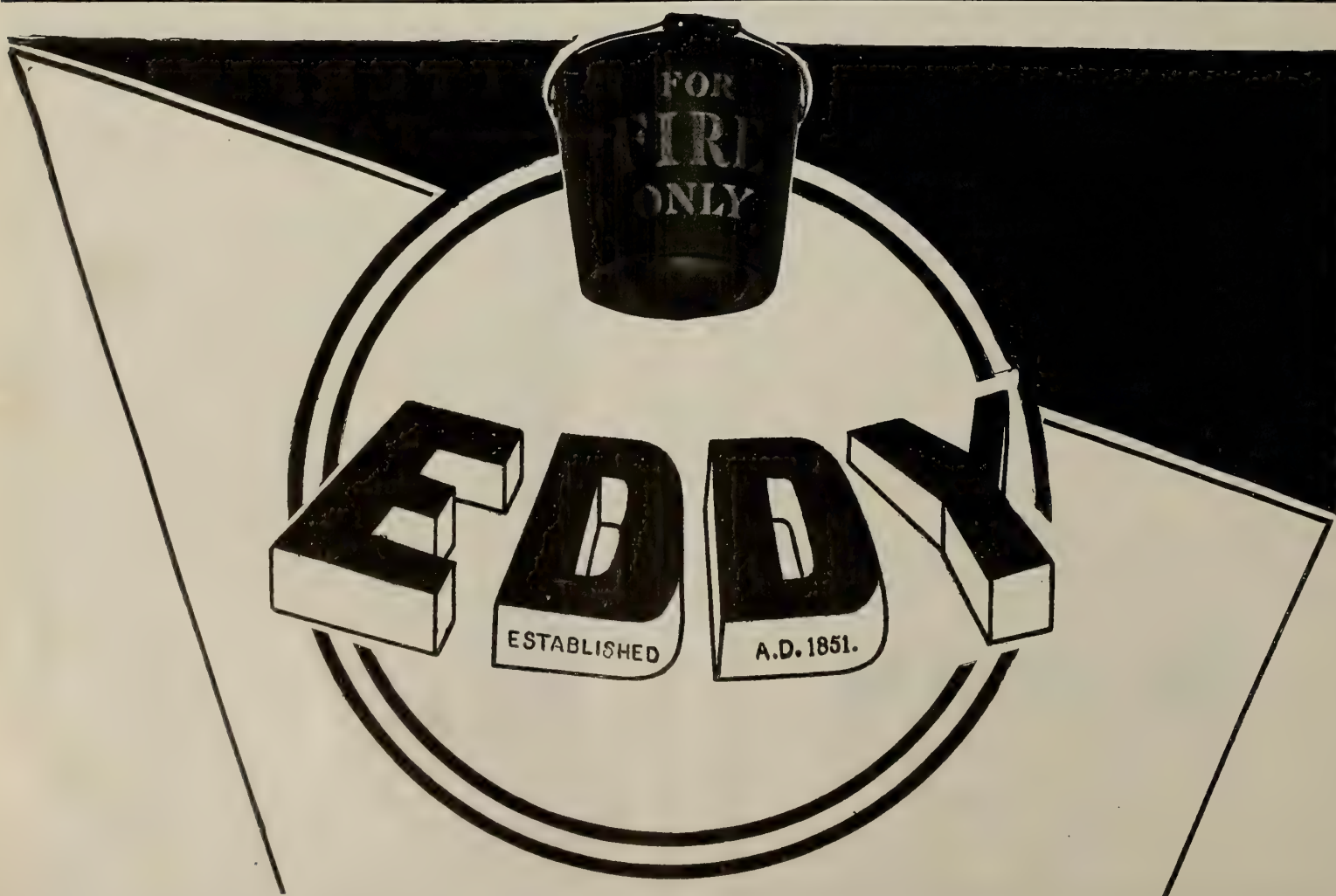
In the midst of the confusion and fever of the times, an anæsthetic must not be mistaken for a cure. America's war measures, largely governmental socialism, are deemed a necessity to win the war. Some declare that they demonstrate the efficacy of socialism, because they soothe the social irritation and remove the pain. They are only an anæsthetic; and if applied repeatedly after the war, will not cure, but kill. This is not the first time society has attempted to fix prices by law. Every attempt has proved a failure. This is not the first time society has endeavored to overthrow the law of supply and demand. This is not the first time society has sought by fiat to make everybody contented and thrifty and rich. This is not the first time society has endeavored by an act of Congress or legislature, to make men honest and

unselfish. The Bolshevik uprising in Russia is the latest endeavor to secure a social millennium, where all property is seized and divided among the people, to make all happy and contented. Is this the democracy the war is promoting and encouraging?

Within the confines of the United States, as a nation, every attempt to interfere with the great laws of industrial growth and progress, has proved, and will prove a failure, except as a temporary measure in an emergency. Wealth is produced only by individual effort, either manual or mental. The rewards of industry and thrift are usually sure, barring sickness and misfortune. These rewards never can be equalized, any more than capacity and brains can be equalized; but the size of the reward is never the measure of content.

Entrance of the United States Government into so many fields of industrial activity is one of the dangers the nation faces. As a permanent programme, it involves great financial risks, unnecessary taxation, an army of new officials; and worse than all, it tends to discourage and supplant individual effort and enterprise. Up to 1913 the industrial power of the United States was due, first, to the skill, brains, energy and initiative of industrial leaders; second, to the protection offered the fruits of that effort, by law, both state and Federal. No governmental or socialistic scheme ever devised can take the place of this personal initiative with its rewards. A destruction of what is called capitalism and a substitution of socialism means decline and decay. Protection to American life and protection to American private property, are the foundations of national prosperity.

Unrestrained competition is a waste of money and energy. The remedy is governmental protection and regulation. The anti-trust law was enacted to stop combinations and force competition. It is a failure, for competition means waste,





IT is a national necessity at present for Canada to improve her trade balance with the United States.

Manufacturers who are buying forgings or drawn or stamped metal parts outside of Canada, can do something towards helping this trade balance, by calling upon us for these goods.

We are equipped to make practically anything in a steel forging or steel stamping. Our capacity is so large that we can give prompt delivery; and our efficiency is such that we can quote you attractive prices for high-class work.

Dominion Forge & Stamping Co., Ltd.

WALKERVILLE, ONTARIO

Toronto Office: 510 Lumsden Building



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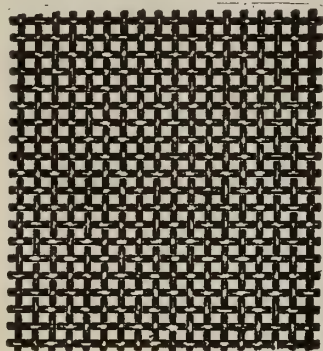
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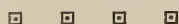
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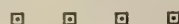


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and now there is a demand for a repeal of the law and, in its place, governmental protection of combinations. The political cry of "anti-trust" was an attack upon natural industrial development. Governmental control of railroads has been in operation for some time, but governmental leasing and operation, defended as a war measure, will prove a failure. Governmental regulation of ship-building, yes, and financial encouragement thereof, would be a success; but government ownership and operation of ship yards and shipping will prove a failure; likewise government building of airships. There is no limit to rational governmental regulation, but government entrance into the field of private endeavor, except in rare instances, should be avoided.

It is often said that public confidence in the private management of public utilities has been shaken, because of mismanagement. Yet it is not fair to judge all by the few isolated cases. Generally speaking, the railroads, steam and electric, the gas and electric plants, all over the country, have been well managed and have given the public good service. If not, the remedy is near at hand. Bankruptcy and disaster are more often due to legislators obsessed with a prejudice against corporations, than to deliberate mismanagement. Burdensome laws and excessive taxation, many of them unreasonable, make success impossible. Governments should reasonably regulate; but regulation does not mean confiscation or destruction.

Much is said about our present business prosperity. Industrial and business prosperity is now due to the war and nothing else. Its fever cannot continue after the war is over. Wages and prices were never so high, largely because war means inflation, and there will likely be a readjustment. The nation's debt is immense and must be settled.

Trade War Inevitable

Free traders concede that a great trade war is inevitable at the close of the present war. Chairman Hurley, of the Shipping Board, says: "There is no time to lose in preparing for the great post-war commercial struggle." However, there is no hint or suggestion of restoring protection to save our markets from invasion. The chief of the United States Bureau of Foreign and Domestic Commerce, himself a free trader, says: "When reconstruction is actually at hand, the American business man will find perfectly normal ways of holding his own in every market of the world without recourse to any selfish national schemes designed to hoodwink our commercial brethren abroad." By "selfish national schemes" is probably meant protection and reciprocity; but how are our home markets to be preserved without recourse to protection?

To meet these grave problems, we are told that the programme is government socialism and free trade, otherwise known as the "new freedom." On January 8, President Wilson announced the peace programme of the United States, laying down fourteen propositions. The third, the only one touching the real heart of this economic war, is: "The removal, so far as possible, of all economic barriers and establishment of an equality of trade conditions among all the nations consenting to the peace and associating themselves for its maintenance."

The natural interpretation to place upon this is a continuance of the policy of free trade, or rather a nearer approach to it. Realizing the political mischief such a radical statement involved, Chairman Kitchin, of the House Ways and Means Committee, hastened, on February 9, to say: "It is impossible that the President meant free trade. I understand him to mean that there shall be no favoritism shown by one nation to another in the matter of ports, that there shall be no discriminating tariffs, no economic boycotting of any



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nation by any other nation. I understand him to mean equal rights for all nations on the seas, and the open door everywhere to all comers in the trade of the world." But this is simply "whipping the devil around the stump." Both President Wilson and Chairman Kitchin mean the same thing—free trade or no protective tariffs.

These tendencies to governmental socialism and destruction of capitalism, are, unfortunately, linked closely to the false doctrine of free trade. Protection is pronounced by the English Labor party, imperialistic and capitalistic. This is the doctrine of the Russian Bolsheviks which thanks America for sympathy extended through President Wilson.

Preliminary steps have already been taken to launch international trade relations between Great Britain, France, and the United States after the war. This would mean the entrance of the United States into an alliance or customs arrangement with three or four nations, with the decision in the hands of all. It would mean a surrender of our own right to determine what our tariff rates and schedules shall be, with the benefit to the other members of the league. War, heavy loans and the rights of nations all unite to make our interests identical with those of the Allies; but the moment the war is over, our commercial interests will clash with those of the Allies.

If President Wilson should extend his theories of a commercial union to the point of surrendering protection for the benefit of the nation, he would conceal free trade under the cloak of "commercial union" or "new freedom," and lay the foundation of another depression and disaster through free trade.

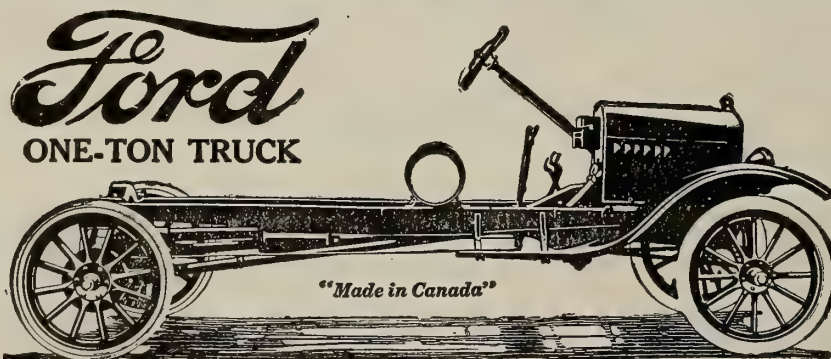
We must not forget that the ancient doctrine of "America for Americans" holds good to-day, as it did in Washington's time. The entrance of the United States into a world-war "to make the world safe for democracy" would be a colossal

blunder if it meant a surrender of the independence and nationality of America to a league of nations, founded on free trade and a removal of all trade barriers. The rights Americans are fighting for are human liberty and justice. They have nothing to do with tariffs and commercial and trade relations or a disorganization of social and industrial institutions. After the war our duty is to ourselves, and every arm of the government should be employed to protect ourselves not only with an army and navy, but with an adequate tariff.

One of the great dangers to this country to-day is the idea that we have outlived nationality and become one of a great family of nations dwelling in everlasting peace and harmony. When the spirit of nationality dies, the nation will die. When the vitality of achievement and the enthusiasm of national glory is gone, America is on the road to decay. William B. Guthrie, Professor of International Law in the College of the City of New York, says: "Nationalism has its faults, yet it has been the greatest inspiring, transforming force in history. It promulgates religions, transforms national habits into great ethical systems; it immortalizes language, gives sacredness to literature, inspires poetry, sets throbbing the harpstrings of a people's melodies."

If the nation is to be swallowed up in a great world-wide alliance, founded on a composite patriotism and a conglomerate family speaking different tongues and having different ideas and levels of development, the struggles and sacrifices of our forefathers to build up a nation will have been in vain. If to this is to be added an assault, in the name of "democracy," on our fundamental institutions, the end is not far away. If peace to the world means a surrender of America and her long-established political, social, commercial and industrial glory, the time has come when real patriots should sound the alarm and save the Republic.

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Saving Time Handling Freight

**The Surest Solution of the Freight Congestion Problem
is the Application of Some Means of Freight
Handling Which Will Increase the
Capacity of Each Workman**

By F. C. MYERS

(Reprinted from "The Nation's Business")

As logs jam in the busy spring drives, so freight jams our terminals under the flood of war conditions, backing up the waters of commerce, causing consternation and chaos throughout the national life. Then come tangled transportation systems, jeopardizing the very life of the nation.

Peace time methods won't do; the dynamite of modern mechanical power of modern methods must be used—and quickly. As the free flow of transportation is dammed, freight is piled higher and higher, the stagnant overflow reaching back from the terminals to the very door of the manufacturer.

This article charts the course to the "key-log" of the commercial jam, and suggests a tried remedy. It lies in the installation of special electrical machinery—machinery with almost human intelligence but without human frailties—which cuts down the necessity for hand trucks and laborers. By clearing shed floors and eliminating costly operations, these ingenious machines shrink costs and save time, thereby speeding the flow of supplies and men from our terminals to the battlefield.

In the days when tobacco was currency and neighbors traded amongst themselves, the seller of goods loaded it on a wagon and hauled it to the buyer. The goods were loaded and unloaded and the principal movement of the freight was ended. As the complexity of life increased and industry began to specialize, the scope of delivery enlarged and the great transportation companies came into being. The capacity of these carriers of merchandise was sufficient under normal conditions. Under stress of war, the roads have become almost paralyzed.

Freight sheds have their floor space piled high with goods that have been awaiting attention for days and weeks, and even months. Yards are blocked with cars waiting for room at the loading and unloading platforms. Streets about freight sheds are daily blocked for hours by teams and motor trucks heavily loaded. Other streets are blocked by empty trucks waiting for an opportunity to carry freight away from the sheds. The cost in time and money of these delays is enormous.

The Movement of Freight

One of the important considerations of freight handling is the time required to transfer freight from the trucks which deliver it to the shed, to the cars or boat; to transfer freight from one car to another at the freight transfer points, where the shipments are segregated for their final destination; and finally the movement of freight from the cars at its final destination to trucks which haul it away from the shed.

Under ordinary conditions, after a car is loaded it moves without serious delay to the transfer point or final destination so that one of the vital features of facilitating freight movement is handling it rapidly at the loading sheds to get the cars under way, and again unloading the cars promptly at destination.

The present freight movement of cars is about 1.2 miles per hour. If only 1 minute were saved for each of these 2,325,000 freight cars, 1614.5 days of 24 hours or the equivalent of 4.4 years would be gained. This would mean to the shipping public that freight will move faster and more freely without any increase in the number of cars on the lines.

And How to Speed It Up

How this saving is to be effected is one of the problems which faces all transportation men. At present sheds are congested by freight, roadways leading to them are clogged, and at the same time the stations themselves are so filled with men and hand trucks that workmen interfere with each other.

The surest solution of this problem is the application of some means of freight handling which will increase the capacity of each workman. The equipment is available and is doing its work wherever it has been tried. It has been shown that the capacity of one man can be increased to equal that of seven or eight.

This speeding up has cleared streets of traffic so that instead of a truck waiting for hours to unload, it unloads in a few minutes. Instead of the freight being piled on the platform, it is put on a truck and immediately removed, leaving the unloading platform clear for the next load.

Not long ago a truck backed to the unloading platform of a railway terminal. The truck driver unloaded on the platform 88 pieces of freight in 26 minutes and clattered away. The next truck moved to the unloading platform. There were only 4 crates on this truck, but it was 25 minutes before the space on the unloading platform was clear so that these crates could be unloaded. The unloading took 18 minutes.

In this instance the second truck lost 25 minutes, and all the trucks strung out back of him lost 25 minutes. And the transportation company lost 25 minutes' use of the platform.

On a later date a truck with three cases backed up to this same platform and unloaded in a little over two minutes. The total weight of these cases was 4,000 pounds. Instead of their being dumped out on the shed floor, they were placed on to an industrial electric truck, carried 3,500 feet in 2 minutes, and unloaded directly into the freight car which was to carry them away.

A Comparison of Speed

Compare the time consumed in handling these two truck loads. In the first case it took 25 minutes to transfer the freight from a shed floor. In the second case, 4,000 pounds of freight was unloaded from a truck and put in the car in less than 5 minutes. It is hard to imagine congestion on a platform where material is handled in this rapid fashion.

At a transfer point where freight is received by boat and transferred to cars, a careful account was kept of four operations. The first operation with a hand truck, 1 man handled 5,303 pounds per hour; with an electric truck, 1 man handled 7,233 pounds—an increase per man of 36 per cent.

In the second case, freight was taken from the floor of the shed with hand trucks and stowed in vessel. One man with a hand truck handled on the average of 2,196 pounds per hour, and with an electric truck 1 man handled 4,794 pounds per hour. The increase is 118 per cent.

With the third operation, flour was unloaded from a shed. The average amount handled by one man per hour with a hand truck was 2,113 pounds, with an electric truck, 1 man handled 2,849 pounds—an addition of 30 per cent., and it should be mentioned in connection that the work was held back by the necessity of removing the flour from the hold of the boat. Another cargo of flour was handled by hand trucks at the rate of 4,267 pounds per man, per hour, as compared with 7,214 pounds per man, per hour, with an electric truck. This is an increase of 70 per cent.

In handling these four cargoes, in the first instance 1 hour, 50 minutes car time was saved, with a cash value of \$37.40; in the second 7 hours 17 minutes boat time was saved, amounting to \$148.92; in the third 3 hours, 10 minutes boat time was saved, amounting to \$64.40, and in the fourth 2 hours, 48

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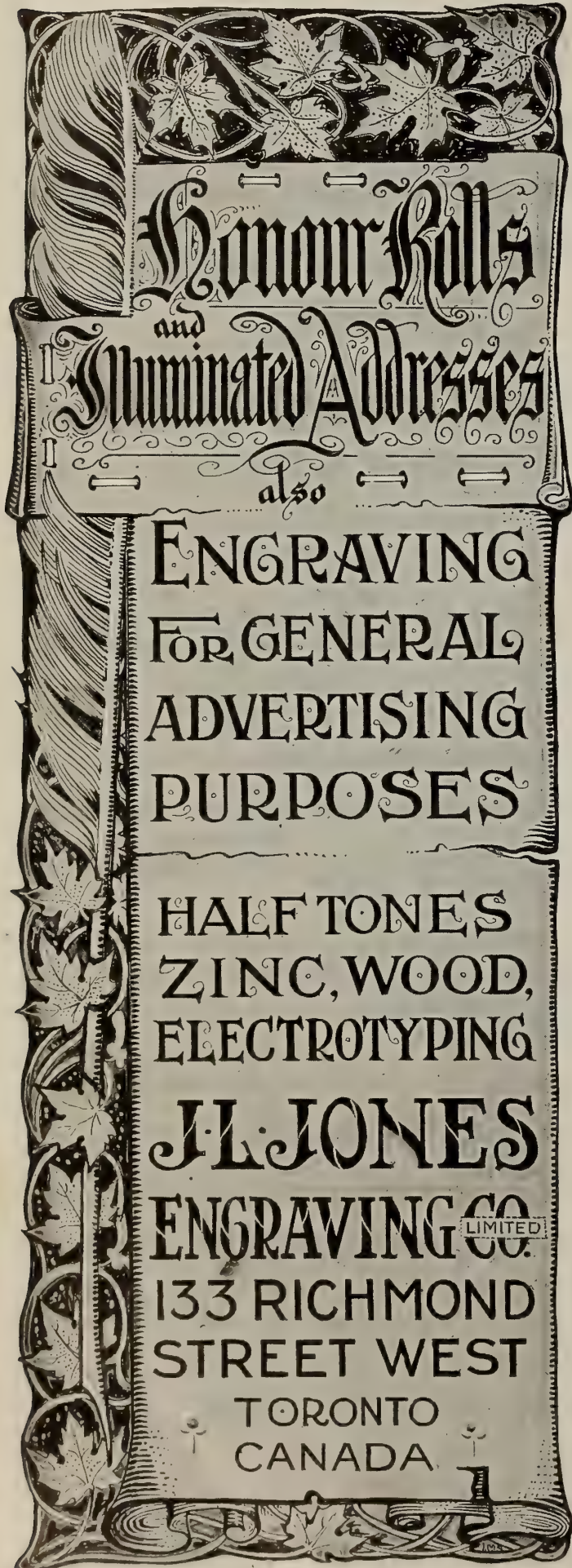
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minutes car time was saved, amounting to \$53.72. The total savings amounted to \$304.63.

Some dramatic machines have been developed for time-saving equipment. The Hullett Unloader handles ore, coal or grain at the rate of 22 tons a load. The operator sails through the air with the shovel and thus has direct control while seeing exactly what he is doing. A round trip—from the boat hold to the unloading destination and back—is completed in 50 seconds. Four of these machines have emptied a 12,000 ton vessel in 4 hours. This is faster than the boat was loaded by gravity at the head of the lakes.

That much ore will fill 240 cars of 100,000-pound capacity.

Some Speed Records

At one of the largest freight terminals in the United States, the average time of ship loading and unloading has been reduced one-half by the installation of electric freight-handling equipment. Six thousand-ton boats are now handled in 72 hours, instead of 144 hours. The saving in cost of freight movement is enormous. It costs about \$300 for every day that a boat of this size lies idle. Thus three days saved means \$900. At the same time the docks and piers have had their capacity for freight practically doubled. Twice as much freight can be passed through in a year as under the old conditions.

The capacity of the boats regularly loading and unloading has been increased by 72 working days a year. If a boat makes the round trip to Europe and back in 30 days more than two trips a year are gained for each boat.

The greatest loss of time in freight movement is in the handling at the shed and on platforms. It costs approximately as much to place freight in cars as it does to haul it 1,000 miles.

The use of mechanical methods is the only means that is available for increasing the capacity of freight sheds. Transportation companies are turning to double deck sheds with the cars coming in at one level, and the teams at another. Freight elevators are common and escalators are available. The capacity of men lifting freight is fairly efficient to a height of five feet. Higher levels swell the cost out of all proportion to the benefits.

Perhaps the first to appreciate the demand for increased facilities were the coal-handling roads. As a result, at Norfolk the Southern Railway has spent several millions of dollars in installing enormous docks to handle nothing but coal. Other lines have also invested millions to care for the vast amount of coal reaching tidewater from their territories. Notable examples are the Chesapeake & Ohio, at Norfolk, the Erie at Weehawken, and lines terminating on the Great Lakes.

Car dumpers with a capacity of forty-two cars an hour are steadily unloading. This coal is then passed to conveyors and dumped automatically into the pockets on the docks. The ocean freighter comes alongside, chutes are lowered and within a few hours the boat is steaming toward Europe.

Conditions steadily became more and more congested at wharves handling other commodities. Labor dwindled as heavier freight continued to arrive. Machines were tried and the amount that could be moved with a low investment opened the eyes of the freight-handling experts. One of the largest railroads, with an investment of less than \$20,000, reduced the men required to handle the freight at one shed from 165 to 118. The tonnage increased 500 tons a month in excess of what was being handled when the improved methods were installed, but the laborers remained 118 and the freight continued to move without delay. Since this experiment other freight sheds have been equipped with similar results.

The Government has been to the fore in pushing the mechanical handling of freight at its own docks and warehouses.

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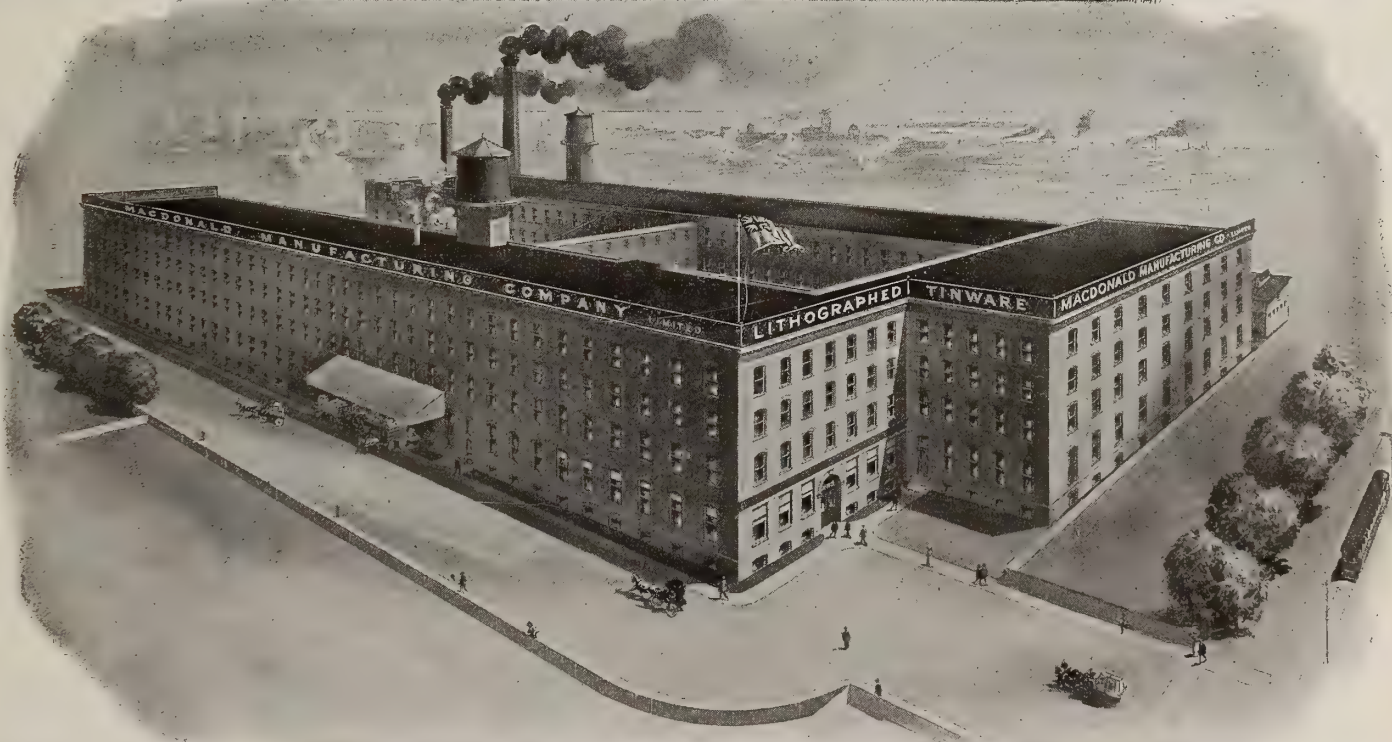
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Progress has been all the more rapid on account of manufacturers giving precedence to Government orders.

The total of money expended in these improved methods cannot be even approximated. At New Orleans a few years ago the city authorities marked the passing of the singing negro stevedores by revamping the entire freight-handling and warehousing equipment at a cost of approximately \$50,000,000. As a result New Orleans is known as one of the fastest ports in the United States, and the amount of material being handled is constantly increasing.

The Central of Georgia Railroad, in conjunction with the Ocean Steamship Company, has just completed an ocean terminal at Savannah, costing well into the millions. This is one of the leading cotton exporting and fertilizer exporting centres of the country. Cargoes are now lifted from the ships' hold by mighty power winches at the shipside, the fertilizer is conveyed by power-operated equipment and dumped into the proper bins.

Electric trucks take the cotton bales from the incoming cars direct to the boats awaiting loads or to the storage shed. The cotton is lifted from the dock floor and placed in the hold of the waiting vessel by power winches. One man on a truck replaces eight or nine with the old-style push truck and the winches lift the cotton in huge bundles weighing a ton or more each.

The British Government has long recognized the need of fast terminals and has developed the docks at Halifax along this line. Investigators of modern terminal facilities, if they are fortunate enough to bear the proper credentials, get sights of amazing speed in handling war materials, which include almost everything entering into the life of the human family. Fortunately the recent catastrophe at Halifax did not destroy the new freight terminals, so that the work of keeping sup-

plies flowing to war-stricken Europe was not interfered with seriously.

Electrical engineers do not claim that they have a patent medicine that will cure every terminal ill by one simple application. But they do know, from past accomplishments, that special attention and diagnosis to each particular case will bring out a method of treatment that will result in a permanent cure.

Training Salesmen for Foreign Markets

Though Addressed to British Manufacturers the Following Article Containing Pointers as to How Best to Capture Trade in Foreign Countries Should Be of Value to Canadian Manufacturers

By MARCOS BUENAVENTURA
(Reprinted from the "Beama Journal")

Success in almost any line of business depends largely on salesmanship. Consummate salesmanship will make good against many handicaps, whereas poor salesmanship, however great the merit of the goods it has to sell, is almost dependent upon chance to maintain a footing. Broadly speaking, all agents and distributors of goods are salesmen—men who, to succeed, should have a thorough insight into human nature in general, and who in particular should have studied the psychology of the people whom they especially wish to interest. In addition to this knowledge of men, they should be familiar with the local conditions and well acquainted with the details of the goods in which they deal. German and American firms have fully grasped these fundamental requirements, and have left no stone unturned to equip their salesmen accordingly. One might as well send

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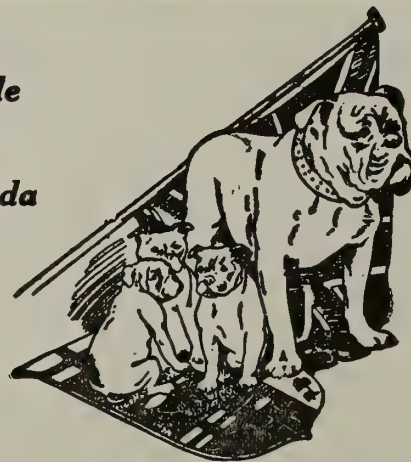
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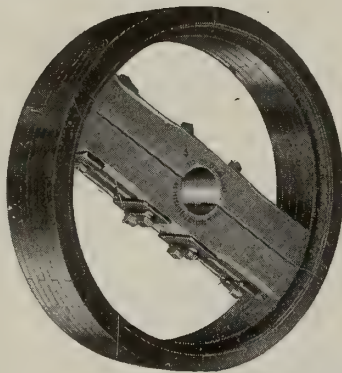
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soldiers to the front without guns, as agents to the markets without knowledge. English manufacturers have only too good reason to recognize the efficiency of the foreign agent when adequately trained and equipped for his purpose.

A Business-Man of Bremen

Some fifteen years ago a native of Bremen landed in Buenos Ayres, determined to find or make a market for his cigars. There was overwhelming competition to face. Many good brands divided up the custom, and according to some prophets it would be practically impossible to edge in another with success. Our stout-hearted German trader laughed at the prophets, and went quietly on his own lines. Having noticed that in the hotels and restaurants many customers asked for a "good cigar," without specifying any particular brand, he saw in this his opportunity. For a week at a time he lunched at the same place, getting on friendly terms (generally by judicious tipping) with manager and waiters. His next move was to leave a box of cigars on trial. The tobacco being good (as he took care the waiters should know by presenting each with a small box) and the price reasonable (20 centavos, or about 5d. each), his brand soon found many patrons. Thus he went on lunching in restaurant after restaurant, and at times taking friends with him, until a large local distribution was secured. This done, he boldly went out for "the great public." He advertised in local papers and interested tobacconists by an ingenious prize scheme. As his reward, this business-man of Bremen has retired with a large fortune, leaving in his place some of his cousins, whom he trained in his methods long before there was any question of his retirement.

This attitude of the German cigar merchant to foreigners, by the way, is characteristic of the Germans. They do not believe much in employing foreigners. Like "coolies," they prefer to have everything from home, and especially employees or partners. Whilst this attitude is not always commendable, in certain lines and circumstances it is of great value. The British manufacturer knows too well how often trade secrets have "leaked out" owing to the spy behind the counter—an amiable, innocent-looking young German, who has ousted his British rival by offering himself for next to nothing, "to gain experience." Now, the German, who is, as somebody has remarked, a born spy—and therefore awake to the danger of being spied on—avoids all such "leakages" by filling important positions by his own men, or by sons of partners. In extreme cases, he will sub-divide the work, so that no particular employee may know too much about the whole. This is worth remembering.

In writing all this, the great point which I wish to drive home is *the need for good salesmen*, and, assuming this need to be generally admitted, I will go on to outline a practical scheme for training them.

A Training Course for Salesmen

Any manufacturer who wishes to train salesmen for service abroad should select, from among his present staff, if possible, the most energetic, intelligent and promising young men and assign them special instructors. Small firms could combine and share expenses.

The instruction could be imparted in the evenings, in classes of twenty to thirty, and the syllabus might be on the following lines:

(1) Methods and working conditions of the firm, illustrated by occasional visits to the offices and workshops. During such absence from work, the employee-student should receive his full pay, as an encouragement to take an interest in his studies.

(2) Language of the country the student will be required to cultivate, for example, Spain. The student will be taught

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		Anhydrous Ammonia		Sulphide of Soda		Phosphate of Soda		Logwood	
		Salt Cake		(all forms)		Copperas		Logwood 51' for cotton	
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Muriatic		Tinning Flux		Soda Ash		Bi-Chromate of Soda		Fustic	
Nitric		Zinc Chloride		Chloride of Lime		Sulphate of Alumina		(all forms)	
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the Spanish language both generally and as regards the technicalities of his business. At an advanced stage, the classes should include conversations, under the supervision of the teacher (who should be a man of commercial experience), relating to the firm's business, the pupils alternating the rôles of buyer and seller.

(3) Physical and political geography. The resources of the country under consideration should be explained by modern methods that interest the students and impress the salient facts upon the memory, not by the conventional dry-as-dust school methods. This geographical instruction can be combined with historical items such as will lend variety to the study and confirm the interest of the student.

(4) Social manners and customs, and especially business methods, of the selected country should receive sufficient attention, so that the future representative may be familiarized as far as possible with the atmosphere of his proposed station. A good instructor will "sense" the adaptability of each student beforehand, thus averting failures at a more advanced stage when they would be most inconvenient and expensive to the firm.

(5) Students should be encouraged to correspond with one another, so as to become accustomed to the native forms and office routine. These practice letters should relate to the firm's business and deal as far as possible with real or likely conditions. Some previous instruction on the subject will be necessary to train the mind to deal with "actual problems."

(6) To test the ability and progress of the students, the instructor should encourage them to write papers on set subjects. A final examination paper covering the whole ground, should precede the granting of a certificate of proficiency.

How America Trains Salesmen

A course such as that suggested should not take up more than nine to twelve months, assuming that the class meets for two or three hours at a time, during three evenings a week. Six months are generally considered sufficient for a person of ordinary intelligence to acquire a fairly good knowledge of a language like Spanish, Portuguese or French. In fact, "four months is the prescribed length of the training course" of the Standard Oil Company of New York, an efficient organization that pays great attention to the training of salesmen destined for foreign markets; but this refers to study and practice taking up the whole day.

The Standard Oil Company's salesmanship School "is unlike most others in that the students are paid \$17.50 per week from the time they enter until the course is finished, or they are dropped. When assigned to permanent positions, the salary is raised to \$2,000 a year. Compared with the pay of beginners in business in the United States, the Standard Oil men appear to get an excellent start. But, as was pointed out by an officer of the company in describing the work of the Far East, employees need to live and dress better than natives, and the higher scale of living requires an outlay which is more comparable with costs at home than with the ordinary expenses in the country of location."

Another Good Scheme.

Another commendable feature of the company's training system is that "men who return to the United States on furloughs are asked to appear before the class and narrate their experiences. They stand ready to answer questions from aspirants as to places in the East, and bring information to the regular instructors about conditions in the regions of China, Borneo or Turkey, where they had been occupied." Here it is well to say that employees of the Standard Oil Company "receive about two weeks' holiday each year, and at the end of three years have from four to six months' vacation with an allowance for travelling expenses to the United States." Pursuing so liberal and enlightened a policy, can it be wondered at that the company has surrounded itself with a loyal, hard-working staff who have the success of the firm

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at heart, and whose efforts, so trained, stimulated and rewarded, have largely conduced to the Standard Oil Company's preponderating position in the production of the world's oil?

A Suggestion to Britain

While American methods, as above illustrated, may not be practicable in Britain as they stand, it is certain that they form a working precedent which can be studied with profit, and which can be modified to suit British conditions and requirements. A very great point to consider is that the attention and expenditure devoted to training in salesmanship pays, and pays magnificently. Another point is that liberal treatment of the employees retains them in the company's service, for few if any can better themselves elsewhere.

As far as possible, the aspirant salesman's first practical work should be under the supervision of an old representative already on the spot. Once he has gained thorough, practical experience of local needs and methods, he can safely be left to his own devices. If this course cannot be followed, it is at any rate far better to have a trained man, although he has yet to gain his actual foreign experience, than a salesman of the old type, who will wait for trade to drop into his mouth, and who relies on "Purveyor to H.M. the King" to win him the favor of Monarchians and Republicans alike.

Danger

German firms are aware, to a certain extent, of the measures being taken in Britain for a vigorous commercial policy after the war; and, since they cannot hope this time to take the British trader by surprise, they are taxing all their resources of unscrupulous ingenuity to bring his efforts to naught.

A friend of mine, a man of considerable experience and astuteness in business—an "old fox," as he has been admirably called—tells me that the Germans will adopt the following plan, which they have already worked successfully in the past. It will be new to many of my readers. The Germans will post in strategical points of the most promising countries so-called "neutral agents," who in reality will be spies. These despicable persons will ask for agencies of British firms, especially those whose products come most into competition with German goods. They will furnish the best of references and will be competent, plausible men. Once they have secured the agency, they will do little or nothing to push the goods—in fact, their policy will be to "tie down British firms," leaving the field open to the enterprise of German competitors, on whose pay list they are. From time to time and with a view to keep the agency, they will pass on an insignificant order, holding out flattering hopes that conditions are improving and that larger orders will follow as the result of tedious, but necessary spade-work. Now, one must not forget that correspondence with foreign markets is rather a prolonged affair and, by the time suspicion of the *bona-fide* of these pests has been aroused and confirmed, months of invaluable opportunities will have been lost to Britain and gained by the insidious enemy.

If I might be allowed to advise the British manufacturer, I would ask him to print the gist of this paragraph in 36-point type and post it conspicuously in his head office. The danger of the method I have exposed may be realized when one thinks of the hundreds of thousands of pounds now being spent collectively by British exporters in organization and propaganda, the training of labor, accumulation of stocks and so on—an expenditure that would be rendered almost useless if the German designs should be allowed to mature and succeed.

The very best way to frustrate this precious German scheme is to employ none but British agents, selected as far

as possible from the existing home staff and specially trained for the foreign field as suggested. Let the agent himself be a sample of All-British goods! Never was the necessity for this precaution more imperative! As above observed, the Germans themselves never employ non-Germans where their own trade secrets and business policy are in question, *and they know*. (Parenthetically, I may add that the next best plan, if "outside" agents had to be engaged, would be to obtain first all available information about any prospective agent of foreign nationality from the local British Consul, and have a clause in the contract specifying that, in case the business does not reach a certain reasonable figure, the firm is to be at liberty to withdraw the agency *ipso facto*. Some men may object to this clause, and in cases quite sincerely; for instance, a good man may apprehend that his work may be lost in the event of adverse conditions preventing his reaching the mark in time. But fair objections of this class can be met as fairly by the promise of serious consideration to any unforeseen difficulties; and the subsequent behavior of the agent will enable his employers to do ample justice to his honesty or otherwise.)

The Time Is Now!

The war is entering its most decisive phase, and time is already at a premium. If Great Britain is to win her share—the lion's share—of the foreign markets awaiting exploitation, she must not rely on merit alone. Merit must be made known, pressed on the attention, asserted convincingly, reiterated, blazoned abroad, or it will be passed by. It is essential to train men who can press the claims of British goods with accuracy, brevity and persuasiveness—men who can cover the earth's markets and bring home to all nations and all languages the advantages of quality as compared with cheapness—men who can adapt themselves to the conditions of the country in which they are stationed, mix with the natives, speak to them in their mother-tongue, enter into their points of view, help them to solve their problems, and, while enabling them to benefit both themselves and their country by judicious investment, assist in the coming mighty expansion of British exports.

Heating of Coal in Piles

One Comparatively Safe Way to Store Coal is to Use
Enough of the Fine Sizes to Occupy the Space
as Completely as Possible and to
Pack Tightly

By C. M. YOUNG
(From the "Manufacturers' News")

Bituminous coal piled in heaps or bins frequently undergoes a process of spontaneous heating as the result of the absorption of oxygen. It seems probable that the first absorption of oxygen by coal which has not previously been exposed to the air may occur as a condensation or a combination of oxygen in some form which does not result in the production of carbon dioxide, but slow combustion soon begins. The absorption of oxygen is accompanied by an increase of temperature, and this by an increased rapidity of absorption; hence the dangerous condition proceeds from bad to worse, until the kindling point is reached, unless the process is interrupted.

A dangerous rise of temperature can be prevented by excluding oxygen, by increasing the bulk of coal in proportion to its surface exposed, or by circulating enough air to dissipate the heat produced. The storage of coal, in practice, varies



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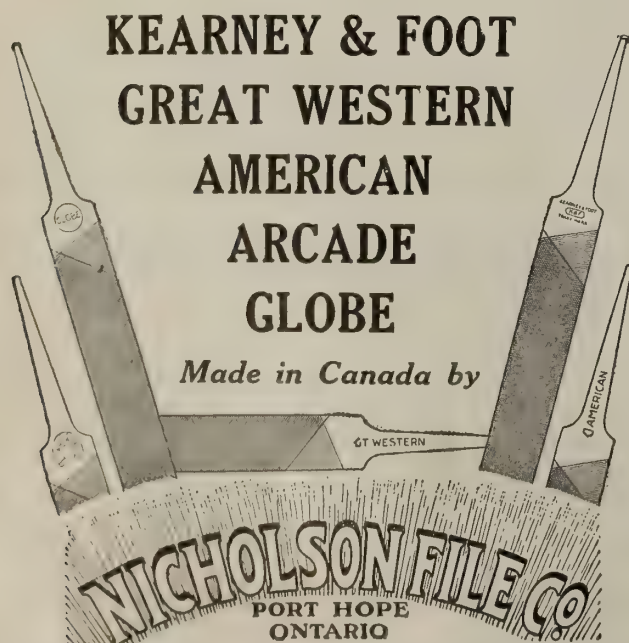
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are used.

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They are:



from almost complete exclusion of oxygen, by storing under water, to such freedom of access as exists when the coal is stored in open piles.

How Oxygen is Absorbed.

Oxygen available for absorption by coal is supplied by the air in the interstices between lumps and by additional air which may enter the pile through circulation. The size of the coal largely affects both of these supplies; for if the fragments are small the spaces between them constitute a small percentage of the total volume, and little oxygen will be available unless the circulation of air brings in a fresh supply, while with large fragments the percentage is relatively large; circulation also is much easier through a pile of coarse lumps. In the case of lump coal, although a large amount of air may be present, the exposed surface is comparatively small and there is little opportunity for the absorption of oxygen to be so rapid as to cause dangerous heating. Attempts have been made to prevent heating by allowing a sufficient circulation of air to carry off the heat generated; obviously this method cannot be applied to fine sizes nor mixed sizes.

When storing coal at the University of Illinois, an attempt has been made to use so much fine coal and to pack it so thoroughly as to prevent circulation of air, while also reducing the original air in the pile so as to prevent heating. This method has been fairly successful, but in some cases the piles have heated. An investigation made when a pile was opened for the removal of portions which had begun to heat indicated that heating had occurred only in those parts of the pile which contained comparatively small proportions of fine coal.

An Experiment on Samples.

To confirm the impression given by the appearance of the pile, samples of coal were taken from the spots where heating was evident, and from neighboring regions in which there was no evidence of heating. These samples were then sized on screens ranging from 2-in. to $\frac{1}{8}$ -in. round hole, giving the following results:

Size, In.	Heated Region.		Unheated Region.	
	Per. cent.	Cum.	Per. cent.	Cum.
Over 2	0.0	...	0.0	...
$\frac{1}{2}$	32.6	32.6	6.3	6.3
$\frac{1}{2}$ -1	36.4	69.0	22.9	29.2
$\frac{1}{4}$ - $\frac{1}{2}$	12.2	81.2	24.8	54.0
$\frac{1}{8}$ - $\frac{1}{4}$	7.4	88.6	18.5	72.5
Below $\frac{1}{8}$	11.4	100.0	27.5	100.0
	100.0	....	100.0	....

It appears from this examination that the portions of the pile in which fine sizes were present in largest proportion did not contain sufficient oxygen to heat the coal to any noticeable extent. The close packing had also so obstructed circulation that little fresh oxygen could have been brought in even if the temperature had been raised to such an extent as to favor circulation of air. This indicates that one comparatively safe way to store coal is to use enough of the fine sizes to occupy the space as completely as possible, and to pack the coal tightly in order that the air space may be reduced and the circulation of air restricted. Apparently the most dangerous condition exists when the coal is of such sizes as to present a large aggregate surface for absorption, and at the same time leave sufficient air space to provide the oxygen required for heating; this condition is found in a loosely packed pile of mixed sizes.

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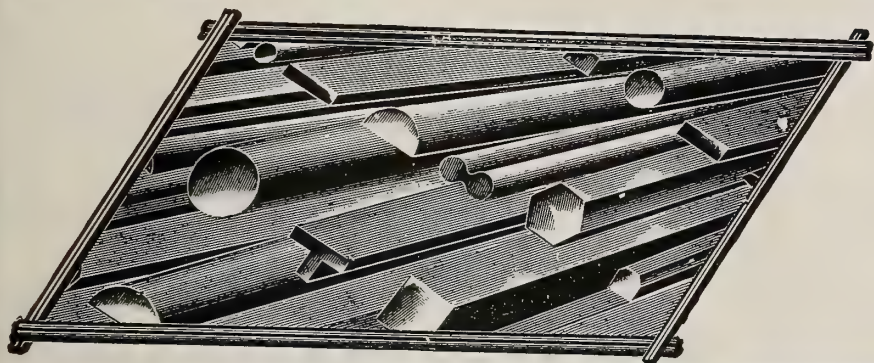
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Gunning for Foreign Trade

An Export End May be Organized on Several Plans; Salesmen May be Sent Direct; Local Agencies May be Established; Joint or Co-operative Representation May be Arranged with Other Manufacturers, etc.

By CRITTENDEN MARRIOTT
 (Reprinted from the "Scientific American")

There are, of course, a multitude of happy accidents which may throw export trade into one's lap most unexpectedly; and connections thus founded frequently enlarge and prosper. But in the long run the man who gets the lion's share of anything is the man who gets up early in the morning and goes out gunning for that thing; and this applies as well to foreign trade as to anything else. Such a philosophy, however, in practice involves more or less serious inconvenience; a citizen who contemplates a gunning expedition must have a gun, and he must know what to do with it.

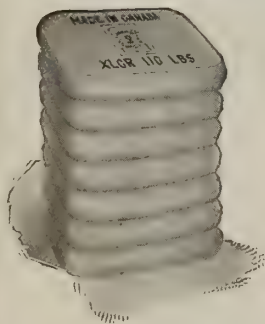
Here is where a lot of would-be exporters fall down. Sometimes they think they have a gun, only to discover, eventually, that it was nothing more than a Governor's Island broomstick, and a damaged one at that. Sometimes they have a sure-enough gun, but one that is not in working order. And sometimes there is nothing whatever the matter with the weapon, but the man behind it is deficient in knowledge of its mechanism or skill in its handling.

All of which is by way of being what Artemus Ward would have characterized as a "parabolic" way of saying that a deliberate effort to capture foreign trade implies that the man behind it has a definite plan of campaign in mind, and one which he is capable of carrying out. That is to say, firms which went after foreign business more deliberately in the early days were confronted at the outset with the necessity of choosing a method of approach. Most of them tried one or two methods before they found one that was satisfactory. Moreover, methods that served well in one business in one country did not serve so well in another business in another country. Jewelry, rice, paints, and machinery could not be sold in just the same way in South America, Russia, Europe—or in the United States for that matter. Methods had to be evolved and evolution was usually costly.

Conditions Are Different.

To-day conditions are different. The various fields have been explored and are no longer mere names. It is usually possible for a would-be exporter to find some one who is selling goods kindred to his own in the country into which he desires to venture. Nearly always he can find some native of that country who knows general trade customs there; and often he can find men who in addition to knowing customs, are more or less acquainted with the particular line of goods that is to be exported. Large firms to-day seldom go into foreign trade until they find an expert to manage that end of their business; they find it cheaper in the end. Small manufacturers who cannot afford to pay high-priced experts can get from the "trade advisers" of the State Department a wealth of information as to the methods best adapted to any particular goods and any particular country they may have in mind.

There are, of course, many things that a manufacturer must consider before embarking on foreign business. One of the most important is the ability to obtain credit information when it becomes necessary. This problem has now been pretty well solved. The standard agencies can give



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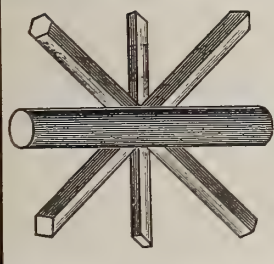
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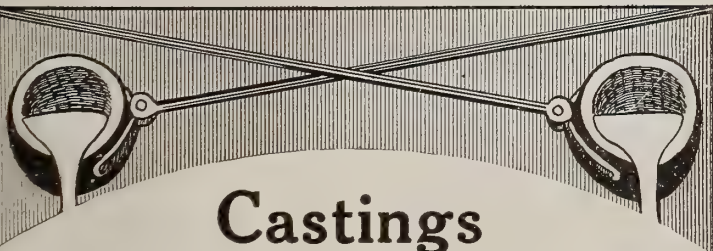
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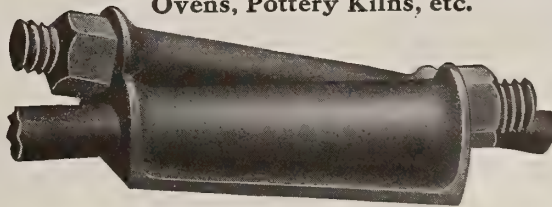
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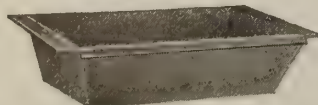


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very full and accurate ratings in a very short time. So far as South America is concerned they can usually do it as quickly as they can for firms in the United States.

An export end may be organized on several plans. Salesmen may be sent direct; local agencies may be established; joint or co-operative representation may be arranged with other manufacturers; arrangements to sell on commission may be made with established export houses; catalogues may be sent to names judiciously chosen from directories or other lists. Another method, not often used, for it takes a lot of brains, is to catch foreign representatives while they are in the United States.

Advantage of Local Agents.

Salesmen are always best if the right sort of man can be obtained, but they are, of course, rare and expensive. Local agents are often very successful, but competent men are not altogether easy to secure, and it is necessary to take care that in addition to being energetic they shall not be carrying too many lines or trying to cover too large a territory. Joint representatives have often proved very efficacious, but they should be restricted to cognate lines so as to get the maximum results for each of the co-operating firms at the minimum of effort and expense. Export houses are very well for sporadic work, but to sell through them is unlikely to lead to the establishment of a permanent business to which the manufacturer's name can be attached. Catalogues and follow-up letters are cheap, but, of course, they are hit or miss; most firms that have tried them insist that a basis of personal acquaintance or of confidence due to introduction is a condition of precedent to their successful use.

Local agents have the advantage of knowing the people, the language, and the business customs, but are generally deficient in the teachings of the particular business involved. This, however, can be remedied. A Boston firm attempting to introduce its line into Argentina received a communication from a live young fellow in Buenos Ayres offering to act as its agent. The firm made inquiries and found that the man had a good reputation and some capital and came to an agreement with him. Immediately the Argentine man went to his chief and practically his only competitor in Buenos Ayres and entered into partnership with him; then he left him in charge and sailed for Boston. Once arrived, he went to the exporters and spent six months in their factory working and learning the technique of the trade. At the end of the six months he was able to point out in practical and economical fashion what the goods needed to make them satisfactory to the Argentine and Uruguayan market. Then he arranged for a big order and went back to Buenos Aires to study the fresh demands of the market there. Since then he has been vibrating between Boston and Buenos Ayres, spending six months annually in each city. He and his partner dominate the trade in their home city and supply practically all dealers in their line of goods in Argentina and Uruguay. The Boston firm finds the arrangement highly profitable.

The Native Representative.

Few firms have the good luck to pick up so energetic a representative as this, but not a few have of late years gone to a good deal of expense to find and train men who have developed almost as well. By various means they have got into touch with young men, natives of South American countries, and have made it worth their while to come to the United States and work in the shops a year or so. Of course such arrangements have to be very carefully engineered to avoid infringing the provisions of the contract-labor importation law. When these young men have learned



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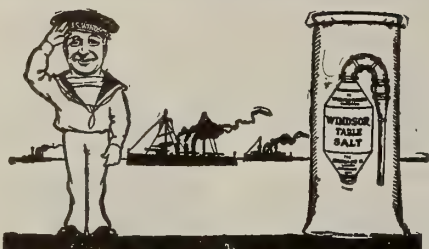
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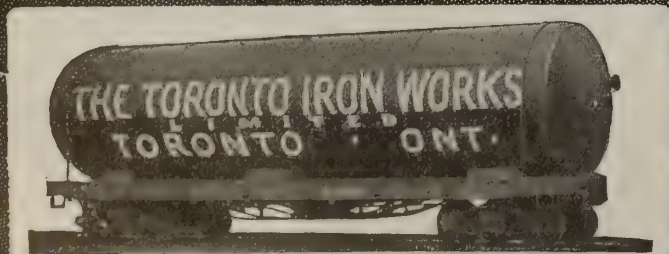
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the technique of the business they are sent back to their homes to act as salesmen or to operate agencies or branch houses. Knowing the language and customs and being usually well connected socially, they are generally able to make good almost at once. Firms who have tried this method have found that the cost of bringing young fellows to the United States and of paying their wages (which, of course, is not all loss), is a very cheap investment.

Experience of Cash-Register House.

For those who cannot afford to train their agents, another method of getting in touch with the right sort of men is recommended by a cash-register house, whose reputation is world-wide, and which won its way in Europe by a brilliant advertising campaign that revolutionized methods over there. This firm was marvellously successful in getting native representatives in the smaller countries before it was strong enough to adopt its great wholesale methods. First, it wrote to the United States Consul, asking him to recommend ten or twelve local men whom he thought would be able to handle its business. When the names came—and they always did come—it submitted them to one or two of the big credit-rating agencies and asked for reports on them. These came very quickly and usually enabled the cash register firm to eliminate most of the nominees. Then it wrote directly to the two or three who remained and inquired into their willingness. In the end the firm usually found a man who rendered them good service. He was seldom a man who knew much about cash registers; but he was always energetic, reliable, and well acquainted both with his countrymen and with their habits of thought. Usually he was related to important people, who not only gave him orders, but who helped him to make good with other people.

Nowadays firms that do not care to venture altogether alone into the export field can usually find companions to share expenses with them. These companions may be either firms engaged in non-competitive but cognate industries (as printing-press makers and type foundries), or they may be firms engaged in the same identical business. The first class of co-operation has long been practised, but the second class has been avoided because it was feared that it might fall under the ban of the Sherman law, which forbids co-operation between competitive firms and which has never been declared by the courts to apply only to co-operation in domestic business. An effort to remedy this uncertainty by Act of Congress is found in the Webb law, recently passed.

Many co-operative arrangements between firms have worked very well. Twelve years ago six Philadelphia firms formed such an association that has prospered exceedingly. These firms dealt in non-competing line of hardware. One made locks, another meat choppers, another saws, another edged tools. To-day they would all probably be recognized as "big" manufacturers, but most of them were in the "small" class when they began their export ventures. They maintain agencies in half a dozen countries and send salesmen all over the world. Each pays a share of the expenses proportioned to the amount of business he does through the association.

Another co-operation enterprise of the same general type was organized in Ohio to supply the printing markets in China. Of the six or eight firms that belonged to it, one sells printing presses, another type, another paper, another general printing furniture and fittings, and so on. Each handles a line of printing material that the others do not touch, but all of which are bought by the same people and can readily be sold by one salesman. Most of the foreign customers of the association have probably scarcely realized that they are dealing with half a dozen firms and not with one.

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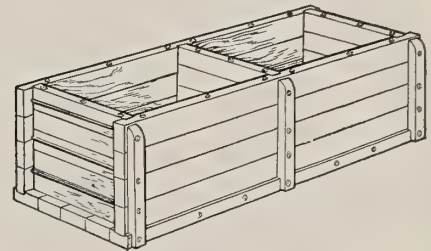
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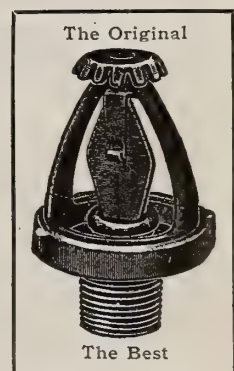
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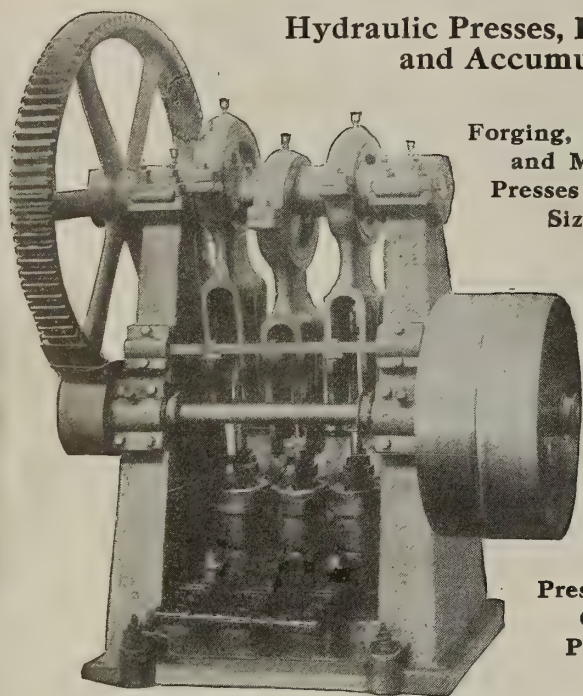
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Keeping Physically Fit

**Medical Men Seem to Agree that it is Not the Burden of
Life Itself that is Pressing Man to the Earth but
His Senseless Disregard of the Laws of Life**

(Reprinted from the "Furniture Journal")

Consternation has been created in connection with the examination of recruits for the overseas forces, by the extraordinary number of young men who have been found physically unfit for active service. So startling have been the revelations in this respect across the line that Congress is taking the matter up, and one of the beneficial results of the war will undoubtedly be a thorough overhauling of the causes that lead to the alarming conditions that seem to have developed in connection with modern industrial life.

Life insurance companies have also had occasion of late to turn their attention to this impairment of the "man power" of the country and are said to be turning down applications to an extent unheard of in the good old days that are past. One is struck more and more with the growing prevalence of what has been aptly called the American disease of "nerves," more frequently called by the euphemistic term of neurasthenia.* Men in the prime of life are compelled to relinquish business pursuits to spend long months and often years in repairing the damages that careless living and reckless commercial driving have wrought. It is now regarded as a common thing for a man between forty and fifty to go through a siege of physical derangement that was almost unknown to our fathers between even the ages of sixty and seventy. Too often, before they reach maturity even, the men of this day are handicapped by physical disability, to an extent that even half a century ago was unknown. What is the matter with the race? is a question that may well be asked.

Some Causes of Breakdown.

What are the causes of conditions that are apparently becoming more and more prevalent and that must undoubtedly exercise a serious effect upon subsequent generations? Some say it is the pace at which we are living, but it cannot be altogether this, for our fathers were hard workers and stayed with the game. It is safe to say, taking it all around, that the generation preceding this worked more hours and had less in the way of mechanical and other assistance than is the case to-day. We have cultivated the habit of saying and thinking that this is a "strenuous" age, but this is only true to a certain degree. It may be that we are trying to put into seven hours a day that for which our fathers took ten, and in this sense the pressure may be greater than it was fifty or even twenty-five years ago, but there is compensation in the fact that the opportunities and inducements for relaxation and recreation are infinitely more numerous and varied now than they were when men worked by lamplight and took their pleasures more seriously. Taking it by and large it can hardly be said that this is a more hard-working or even more energetic age than any that have gone before it. There may be more feverish endeavor on account of competition and more diversified effort from the greater variety of interests and occupations involved, but even these, according to the philosophy of the day, should afford a relief to tense nerves and concentrated brain and muscles.

It has been said that work never kills any man, and on this account some lay at the door of anxiety the responsibility for the breakdowns that are so frequent, and sudden deaths that are so appalling of late. But men of all times have been subject to great pressure and have been heirs to worry, from the time of the patriarch Job, to whom life became such an

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intolerable burden. Yet Job did not expire under a load that would have sent most men of the twentieth century to a sanitarium, asylum or the grave, for relief.

Medical men seem to agree that it is not the burden of life itself that is pressing man to the earth, but his senseless disregard of the laws of life. Medical practitioners claim that it is not the brain, but the stomach, that is the "weak member" which brings the whole body into disorganization and final dissolution. Wrong eating and a disregard of the natural law of exercise combine to promote that failure in functioning in organs that is sure to bring collapse as the assimilation of the deadliest poison.

Our fathers ate three full meals a day, and were not particular as to what these consisted of, so long as they could be called food, yet they seemed to get away with it. As boys, most of us can remember the loaded tables and the great variety of eating and drinking, with the accent often on the latter, but it was so unusual to hear of anyone dropping dead that a case in six months would prove a sensation. But in those days there was little street-car riding, there were no automobiles, and there was not a picture theatre at every corner. After a day's toil there was the visiting, the occasional gathering, and the good old bucksaw when the liver was inclined to assert itself. To-day we hire men to shovel the snow and balk at a half-mile walk to a place of amusement or a house of worship. We pay street car fare, and the debt to our physical being goes on piling up against the day of reckoning. When we do not eat too much we eat too many things, and do not consume those things that will help to neutralize the poisons that our system does not eliminate through exercise.

A young business man, under forty, went to see a prominent physician recently, after being turned down by a life in-

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TRADES AND LABOUR BRANCH

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Persons having business with any of the Inspectors should communicate with them at the Parliament Bldgs., Toronto.

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Superintendent, Minister of Public Works
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Phone Main 5800



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To Manufacturers, Dealers, and Users of Steam Boilers

All steam boilers built in, or entering the Province of Ontario, and boilers exchanged or repaired, are subject to Government Inspection as prescribed in the Steam Boilers Act, 3 George V., C. 61.

Before any work of repair or alteration is commenced on any boiler, notice must be sent to the Department stating the nature and extent of the repairs or alterations proposed to be made. If the Chief Inspector should consider such repairs or alterations of an extensive character, the boiler must be inspected in accordance with the Regulations by an Inspector authorized under the Act.

All communications should be addressed to the Steam Boiler Branch, Department of Public Works, Parliament Bldgs., Toronto.

HON. F. G. MACDIARMID, D. M. MEDCALF,
Minister of Public Works, Chief Inspector of Steam Boilers.
W. A. RIDDELL, M.A., Ph.D., Superintendent.

TRADES AND LABOUR BRANCH

NOTICE

TO STATIONARY AND HOISTING ENGINEERS

Everyone operating a STATIONARY steam plant of 50 h.p. or over in the Province of Ontario must hold a Stationary Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Everyone operating a HOISTING steam plant working at a pressure of 20 pounds or over irrespective of horse power, and used for hoisting in structural operations or excavating purposes, in the Province of Ontario, must hold a Hoisting Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Application forms for obtaining STATIONARY or HOISTING Engineers' Certificates, may be had upon applying to the Chairman.

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THOS. C. IRVING, Gen. Man. Western Canada, Toronto

surance company as a bad risk. He had incipient arterio sclerosis, or hardening of the arteries, which ought not to come to a man, if ever, until he is beyond the three score mark. It meant down and out in a few years unless something could be done. Neglect of exercise, promiscuous eating, followed by constipation, which prevented his system getting rid of the toxins, brought on a thickening of the arterial tissue, which promised heart trouble and early death. He was given a simple regimen, told to take regular exercise, give himself time to sleep, and was promised an extension of at least twenty years if he kept up the treatment faithfully. He now lives the simple life, does his own chores, walks to the office and says he feels fifty per cent. better already.

A business man who was told five years ago to quit business and go back to nature in order to restore physical balance, has just completed his period of almost complete renaissance. His verdict is that there is nothing to beat the open air, manual labor and a change of mental atmosphere to renew physical youth and restore mental power. Everybody may not be able to thus cut loose from environment or change his occupation at will, but it is possible for any man, who is running downhill physically, to put on the brakes by regulating his eating and taking a few minutes' exercise every day. The call for production is a call to faded business men to renew their wasted vitality and bring back their mental vigour by the only safe and sure way.

It is safe to say that nine out of ten people eat too much, and it is quite as true that the failure to eliminate the waste in food assimilation is the fundamental cause of most of the physical troubles to which business men are subject. The man who cuts down wheat, bread, sugar and cereals pretty generally, who eats meat not oftener than once a day, or better still, three times a week, who consumes plenty of fruit and green vegetables and a few potatoes, and who walks at least two miles a day, or digs two hours in the garden, will do more for himself, his heirs, his country and humanity, just now, than he can in any other way.

If you don't believe this, ask some sane, intelligent medical man and give him authority to commit you to his endorsement of this advice.

Japan Exports Calcium Carbide

Now Becoming One of That Country's Leading Exports, Due to Ban on Export of Sulphate of Ammonia

The export from Japan of calcium carbide is rapidly increasing, and it is thought by some that it will be soon one of the leading items on Japan's export list. The great increase is, to a large extent, the effect of the export ban on sulphate of ammonia. The commodity is now cheap and the home demand is met satisfactorily. Manufacturers not wishing to sell sulphate of ammonia at prevailing low prices have, to a large extent, stopped the refinement and now export their product in the form of calcium carbide.

Before the war most of the carbide was imported, only a small amount being produced in Japan. Since the war began many new uses for carbide have developed, with the result that production has been greatly increased. Last April there were fifteen factories producing carbide, their combined yield being 58,377,397 pounds valued at 2,613,273 yen (approximately \$1,300,000). Since then their productive capacity has increased and the total output is now estimated as above 70,000,000 pounds. The total export of calcium carbide for 1917 (up to the close of November) was 4,615,320 pounds, valued at 700,344 yen. Practically no shipments of carbide were registered during previous years.

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ABBASIVES

- *D. A. Brebner, Ltd., Toronto.

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- *The Brown Bros., Ltd., Toronto.

ACETYLENE BURNERS

- *The Prest-O-Lite Company.

ACETYLENE GAS

- *The Prest-O-Lite Company.

ACETYLENE GAS BURNERS

- Economic Acetylene Burner Co., Toronto.

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- *The Steel Company of Canada, Limited, Hamilton, Ont.

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- *Eureka Mineral Wool & Asbestos Co., Toronto.

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AUTOGRAPHIC REGISTER SYSTEMS

- Business Systems, Ltd., Toronto.

AUTOMATIC SCREW MACHINE PRODUCTS

- *United Brass & Lead, Ltd., Toronto

AUTOMOBILE ACCESSORIES

- *Northern Electric Co., Limited, Montreal.
- *Tallman Brass & Metal Co., Hamilton, Ont.

AUTOMOBILE PARTS

- *Dominion Forge & Stamping Co., Walkerville, Ont.
- *United Brass & Lead, Ltd., Toronto

AWNING CORD (cotton)

- Hamilton Cotton Co., Hamilton, Ont.

AXLES

- Canada Forge Co., Ltd., Welland, Ont.
- Guelph Spring & Axle Co., Ltd., Guelph, Ont.

AXLES, carriage and automobile

- Guelph Spring & Axle Co., Ltd., Guelph, Ont.

BABBITT METAL

- Alonzo W. Spooner, Limited, Port Hope, Ont.
- *Dominion Metal Co., Ltd., Sherbrooke, P.Q.

- *The Canada Metal Co., Toronto.
- *Tallman Brass & Metal Co., Hamilton, Ont.

BACON

- E. W. Fearman Co., Ltd., Hamilton, Ont.

BAGS

- *Scythes & Co., Ltd., Toronto.

BAGS, Cotton

- The Canadian Bag Co., Ltd., Montreal, Que.

BAGS, jute

- The Canadian Bag Co., Ltd., Montreal, Que.

- *Scythes & Co., Ltd., Toronto.

- BAGS, travelling
- J. Eveleigh & Co., Ltd., Montreal, Que.

- Lamontagne, Ltd., Montreal, Que.
- The M. Langmuir Mfg. Co., of Toronto, Ltd., Toronto.

- BAKING JAPAN
- *Berry Bros., Ltd., Winnipeg, Man.

- BAND RESAWS
- *Canada Machinery Corporation, Limited, Galt, Ont.

- *P. B. Yates Machine Co., Ltd., Hamilton, Ont.

- BAND SAWS
- *E. C. Atkins & Co., Inc., Hamilton, Ont.

- BANK AND OFFICE RAILINGS
- *The Geo. B. Meadows, Toronto, Wire, Iron & Brass Works Co., Ltd., Toronto.

- *Canada Wire and Iron Works, Hamilton, Ont.

- BANK FITTINGS
- The Canadian Office & School Furniture Co., Ltd., Preston, Ont.

- BANK RAILINGS and CAGES
- *Canada Wire and Iron Goods Co., Hamilton, Ont.

- *Dennis Wire & Iron Works Co., London.

- BANK SIGNS AND FITTINGS
- *Tallman Brass & Metal Co., Hamilton, Ont.

- BARRELS, steel, and containers
- *Smart-Turner Machine Co., Ltd., Hamilton, Ont.

- BARS, iron
- London Rolling Mill Co., Limited, London, Ont.

- BARS, steel
- London Rolling Mill Co., Limited, London, Ont.

- BASEBALL GOODS
- A. J. Reach Co., Brantford, Ont.

- BATHS, enamelled
- Amherst Foundry Co., Ltd., Amherst, N.S.

- BATTERIES, dry
- The Canadian National Carbon Co., Ltd., Toronto.

- Canadian Carbon Company, Ltd., Toronto.

- BEARINGS
- *The Chapman Double Ball Bearing Co., Ltd., Toronto.

- *The Goldie & McCulloch Co., Ltd., Galt, Ont.

- BEARINGS, bronze
- *Tallman Brass & Metal Co., Hamilton, Ont.

- *United Brass & Lead, Ltd., Toronto

- BEARINGS, pillow block and up-right
- *Dodge Mfg. Co., Ltd., Toronto.

- *The Goldie & McCulloch Co., Ltd., Galt, Ont.

- BEARINGS
- *The Goldie & McCulloch Co., Ltd., Galt, Ont.

- BEDS, camp folding
- *Otterville Mfg. Co., Ltd., Otterville, Ont.

- BEEF
- E. W. Fearman Co., Ltd., Hamilton, Ont.

- BEER
- E. L. Drewry, Winnipeg, Man.

- BELTING, chains
- *Canadian Link-Belt Co., Toronto.

- *Dodge Mfg. Co., Ltd., Toronto.
- *The Goldie & McCulloch Co., Ltd., Galt, Ont.

- BELTING, elevator
- *Canadian Consolidated Rubber Co., Ltd., Montreal, Que.

- Dunlop Tire & Rubber Goods Co., Ltd., Toronto.

- BELTING, leather
- The Beardmore Belting Co., Ltd., Toronto.

- *J. L. Goodhue & Co., Danville, P.Q.

- *Sadler & Howarth, Montreal.
- *The D. K. McLaren Belting Co., Ltd., Montreal.

- *The J. C. McLaren Belting Co., Ltd., Montreal.

- BELTING, rubber
- *Canadian Consolidated Rubber Co., Ltd., Montreal, Que.

- *Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
- *Gutta Percha & Rubber, Limited, Toronto.

- BELTING, stitched cotton duck
- *Dominion Belting Co., Ltd., Hamilton.

- BENT GOODS
- The Crown Lumber Co., Woodstock, Ont.

- BICYCLES AND ACCESSORIES
- *Canada Cycle and Motor Co., Ltd., Toronto.

- BISCUITS
- The Montreal Biscuit Co., Montreal, Que.

- BLACK SHEETS
- *A. C. Leslie & Co., Montreal.

- BLANKETS
- Slingsby Mfg. Co., Ltd., Brantford, Ont.

- J. Walsham & Son, Ltd., Bolton, Ont.

- BLANKETS, horse
- Slingsby Mfg. Co., Ltd., Brantford, Ont.

- J. Walsham & Son, Limited, Bolton, Ont.

- BLASTING ACCESSORIES
- Canadian Explosives, Ltd., Montreal, Que.

- BLEACHING POWDER
- Canadian Salt Co., Ltd., Windsor, Ont.

- BLOWERS
- *Sheldons, Ltd., Galt, Ont.

- *The Canadian Blower & Forge Co., Limited, Kitchener, Ont.

- BOARDS, wood, binder, fibre specialties
- *Beveridge Paper Co., Limited, Montreal.

- BOATS OF ALL KINDS
- Peterboro Canoe Co., Ltd., Peterboro, Ont.

- BOILER COMPOUND and OILS
- Electric Boiler Compound Co., Ltd., Guelph, Ont.

- BOILER PRESERVATIVES
- *Beveridge Paper Co., Limited, Montreal.

BOILERS

- *M. Beatty & Sons, Ltd., Welland, Ont.

- *Darling Bros., Montreal.
- *Goldie & McCulloch Co., Limited, Galt, Ont.

- John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

- *Polson Iron Works, Ltd., Toronto.
- J. & R. Weir, Montreal, Que.

- Taylor-Forbes Co., Ltd., Guelph, Ont.

- *The Watrous Engine Works Co., Ltd., Brantford.

- BOILERS, hot water or steam.
- Steel & Radiation, Ltd., Toronto.

- Warden King, Ltd., Montreal, Que.

- BOILERS, steam.
- *Jenckes Machine Co., Sherbrooke, Que.

- *The Goldie & McCulloch Co., Ltd., Galt, Ont.

- Steel and Radiation Ltd., Toronto.
- Warden King, Ltd., Montreal, Que.

- *The Watrous Engine Works Co., Ltd., Brantford, Ont.

- BOILERS, steam and brass work
- *The Watrous Engine Works Co., Ltd., Brantford, Ont.

- BOILER STANDS
- Anthes Foundry Ltd., Toronto.

- BOLSTERS
- *Canadian Car & Foundry Co., Ltd., Montreal, Que.

- BOLTS
- *The National Acme Mfg Co., Montreal, Que.

- *United Brass & Lead, Ltd., Toronto

- BOLTS AND NUTS
- *The Canadian Tube & Iron Co., Ltd., Montreal, Que.

- *The Steel Company of Canada, Limited, Hamilton, Ont.
- Starr Mfg. Co., Ltd., Dartmouth, N.S.

- *United Brass & Lead, Ltd., Toronto

- BOOKBINDERS
- R. G. McLean, Toronto.

- *The Brown Bros., Ltd., Toronto.

- BOOKCASES
- *Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

- BOOKCASES, sectional (Gunn)
- The George McLagan Furniture Co., Ltd., Stratford, Ont.

- BOOKLETS
- R. G. McLean, Toronto.

- BOOKS, blank
- *The Brown Bros., Ltd., Toronto.

- BOOTS AND SHOES
- Ames-Holden-McCreedy, Ltd., Montreal, Que.

- J. Leckie Co., Ltd.
- The John Ritchie Co., Ltd., Quebec, Que.

- BOXES
- *Crouse-Hinds Co., Ltd., Toronto.

- BOXES, cellular board:
- *The Thompson & Norris Co. of Canada, Ltd., Niagara Falls.

- BOXES, rattle and soap
- The Arlington Co. of Canada, Ltd., Toronto.

- BOXES, steel shop
- *Steel Trough and Machine Co., Ltd., Tweed, Ont.

- BOXES AND SHOOKS, wooden
- The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

- BOXES, wooden
- G. & J. Esplen, Montreal, Que.

- Barchard & Co., Ltd., Toronto.

- BRAIDS AND TRIMMINGS
- The Moulton Mfg. Co., Limited, Montreal.

- BRAKE SHOES
- *Canadian Hart Wheels, Limited, Hamilton, Ont.

- BRANDS, burning
- Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS BOLTS AND NUTS

*Tallman Brass & Metal Co., Hamilton, Ont.
 *United Brass & Lead, Ltd., Toronto

BRASS AND BRONZE WIRE

*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

BRASS, BRONZE and ALUMINUM LETTERS

*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS ENGRAVERS

Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS FOUNDERS AND**FINISHERS**

*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.
 *Tallman Brass & Metal Co., Hamilton, Ont.

*United Brass & Lead, Ltd., Toronto

BRASS GOODS

*Penberthy Injector Co., Ltd., Windsor.

*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.

*Mueller Mfg. Co., Sarnia.

The Garth Co., Montreal, Que.

The James Morrison Brass Mfg. Co., Ltd., Toronto.

*The Kerr Engine Co., Ltd., Walkerville, Ont.

*Tallman Brass & Metal Co., Hamilton, Ont.

*United Brass & Lead, Ltd., Toronto.

BRASS PLATES

Geo. Booth & Son., Toronto.

*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS RODS

*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS RODS, SHEETS AND**PLATES**

*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

BRASS SIGNS AND MEMORIALS

*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS TUBING, seamless

Canadian Seamless Wire Co., Ltd., Toronto.

*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WIRE

Canadian Seamless Wire Co., Ltd., Toronto.

*Tallman Brass & Metal Co., Hamilton, Ont.

*Booth-Coulter Copper & Brass Co., Ltd., Toronto.

*The Watrous Engine Works Co., Ltd., Brantford, Ont.

*United Brass & Lead, Ltd., Toronto

*Tallman Brass & Metal Co., Hamilton, Ont.

*Booth-Coulter Copper & Brass Co., Ltd., Toronto.

*The Watrous Engine Works Co., Ltd., Brantford, Ont.

*United Brass & Lead, Ltd., Toronto

*Tallman Brass & Metal Co., Hamilton, Ont.

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*Tallman Brass & Metal Co., Hamilton, Ont.

*Booth-Coulter Copper & Brass Co., Ltd., Toronto.

*The Watrous Engine Works Co., Ltd., Brantford, Ont.

*United Brass & Lead, Ltd., Toronto

*Tallman Brass & Metal Co., Hamilton, Ont.

BRUSHES

Simms, T. S., & Co., Limited, St. John, N.B.

Stevens-Hepner Co., Limited, Port Elgin, Ont.

BRUSHES, carbon

Canadian National Carbon Co., Ltd., Toronto.

BUCKET TANKS

*Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.

*The Bennett & Wright Co., Ltd., Toronto, Ont.

*Buckles, shoe and coat
 Parmenter & Bulloch Co., Limited, Gananoque, Ont.

*Building Blocks, vitrified, salt glazed
 Standard Clay Products, Ltd., St. Johns, Que.

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 Standard Clay Products, Ltd., St. Johns, Que.

CARBONS, arc light

Canadian Carbon Co., Limited, Toronto.

The Canadian National Carbon Co., Ltd.

CARBONS, flame

Canadian Carbon Co., Limited, Toronto.

CARBONS (headlight)

*Crouse-Hinds Co., Ltd., Toronto.

*Carbonic Acid Gas
 Canadian Carbonate Co., Montreal.

*Card Record Systems
 *Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

*Carpet Yarns, worsted and wool
 Toronto Carpet Mfg. Co., Limited, Toronto.

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 Toronto Carpet Mfg. Co., Limited, Toronto.

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*Carpet Yarns, worsted and wool
 Toronto Carpet Mfg. Co., Limited, Toronto.

CHAINS, for elevators, conveyors and drives

*Canadian Link-Belt Co., Toronto.

CHAIRS

*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

*CHAIRS, assembly hall
 Stratford Mfg. Co., Ltd., Stratford, Ont.

*CHAIRS, folding
 Stratford Mfg. Co., Ltd., Stratford, Ont.

*CHAIRS, rattan and upholstered
 Imperial Rattan Co., Ltd., Stratford, Ont.

*CHAIR SEATS, fibre
 *Beveridge Paper Co., Limited, Montreal.

*CHECKS, swing checks, etc
 *Mueller Mfg. Co., Ltd., Sarnia.

*CHEMICALS
 *The Grasselli Chemical Co., Ltd., Toronto.

*The Nichols Chemical Co., Ltd., Montreal, Que.

*CHEMICAL LABORATORY APPARATUS
 The Geo. M. Hendry Co., Limited, Toronto.

*CHEMISTS, INDUSTRIAL
 *Milton Hersey Co., Montreal.

*CHICOLETS AND CHEWING GUM
 Canadian Chewing Gum Co., Ltd., Toronto.

*CIGARETTES AND TOBACCO
 Philip Morris & Co., Limited, Montreal, Que.

*CIRCULAR CUTTERS, solid steel
 *Galt Knife Co., Ltd.

*The Peter Hay Knife Co., Limited, Galt, Ont.

*CIRCULAR SAWS
 *E. C. Atkins & Co., Inc., Hamilton, Ont.

*CLAM SHELL BUCKETS
 *M. Beatty & Sons, Ltd., Welland, Ont.

*CLOCKS, TIME
 *International Business Machines, Limited, Toronto.

*CLOCKS, WATCHMEN'S
 *The Bennett & Wright Co., Ltd., Toronto, Ont.

*CLOSET SEATS
 *Goderich Organ Co., Goderich, Ont.

*CLOTHING
 John W. Peck & Co., Ltd., Montreal, Que.

*Mackenzie & Co., Ottawa, Ont.

*CLOTHING, leather and sheepskin lined coats
 *A. R. Clarke & Co., Ltd., Toronto.

*CLOTHING, Mackinaw
 The Carss Mackinaw Clothing Co., Ltd., Orillia, Ont.

*CLOTHES LINES, cotton
 Hamilton Cotton Co., Hamilton, Ont.

*CLUTCHES
 *Dodge Mfg. Co., Ltd., Toronto.

*CLUTCHES, conveyors
 *The Goldie & McCulloch Co., Ltd., Galt, Ont.

*COAL
 *Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.

*Standard Fuel Co., Toronto.

*COAL CUTTERS
 *Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

*COBALT OXIDE
 The Coniagas Reduction Co., Ltd., St. Catharines, Ont.

*COCCOA AND CHOCOLATE PREPARATIONS
 Walter Baker & Co., of Canada, Ltd., Montreal, Que.

*COFFEE
 S. H. Ewing & Sons, Montreal, Que.

*COLD DRAWN SHAPES, flats, squares and hexagons
 *The Canadian Drawn Steel Co., Ltd., Hamilton, Ont.

*Union Drawn Steel Co., Limited, Hamilton, Ont.

*COLD STORAGE DOORS
 John Hillock & Co., Ltd.,

COLORS

Brandram-Henderson, Limited,
Montreal, Que.
A. Ramsay & Son Co., Montreal,
Que.

COMBS, fine dressing and name
The Arlington Co. of Canada, Ltd.,
Toronto.

COMMERCIAL STATIONERY

*Brown Bros., Ltd., Toronto.
**CONCRETE COATINGS, PAINTS,
ETC.**

*Beveridge Paper Co., Ltd., Mont-
real.

*Trussed Concrete Steel Co. of
Canada, Limited, Walkerville, Ont.
The Imperial Varnish & Color Co.,
Limited, Toronto.

CONDUITS FOR INTERIOR**WIRING**

*Conduits Company, Ltd., Toronto.

CONDULET BOX FITTINGS

*Crouse-Hinds Co., Ltd., Toronto.

CONDULETS (Marine)

*Crouse-Hinds Co., Ltd., Toronto.

CONFECTIONERY

Ganong Bros., Ltd., St. Stephens,
N.B.
Moirs, Limited, Halifax, N.S.
The Montreal Biscuit Co., Montreal.

**CONTAINER BOARD—strong con-
tainer**
Bathurst Lumber Co., Ltd., Bath-
urst, N.B.

CONTRACTOR'S PLANT

*M. Beatty & Sons, Ltd., Welland.
*Canadian Allis-Chalmers, Limited,
Toronto.

CONVEYORS

*Canadian Link-Belt Co., Toronto.
*Canadian Mathews Gravity Carrier
Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.

COPPER

*Eugene F. Phillips, Electrical
Works, Limited, Montreal.
*Booth-Coulter Copper & Brass Co.,
Limited, Toronto.

**COPPER, SHEETS, PLATES, BARS,
RODS**
*Brown's Copper and Brass Rolling
Mills, Ltd., New Toronto.

COPPER SHEETS AND PLATES

*Booth-Coulter Copper & Brass Co.,
Limited, Toronto.
*Tallman Brass & Metal Co., Ham-
ilton, Ont.

COPPERSMITHS

*Booth-Coulter Copper & Brass Co.,
Limited, Toronto.

COPPER TUBING, seamless

Canadian Seamless Wire Co., Ltd.,
Toronto.

*Booth-Coulter Copper & Brass Co.,
Limited, Toronto.

COPPER WIRE

Canadian Seamless Wire Co., Ltd.,
Toronto.

*Standard Underground Cable Co.
of Canada, Ltd., Hamilton, Ont.

CORKS

S. H. Ewing & Sons, Montreal, Que.
CORK CARPET
Dominion Oil Cloth Co., Ltd., Mon-
treal, Que.

CORRUGATED PAPER BOXES

Adams Cellboard Co., Toronto.
Corrugated Paper Box Co., Ltd.,
Toronto.

*Hinde & Dauch Paper Co., To-
ronto.

*Martin Corrugated Paper & Box
Co., Limited, Toronto.

*The Thompson & Norris Co. of
Canada, Ltd., Niagara Falls, Ont.

CORUNDUM, artificial

*D. A. Brebner, Ltd., Toronto.

CORSETS

Dominion Corset Co., Quebec, Que.

COTTONS

*Dominion Textile Co., Limited,
Montreal, Que.

*Montreal Cottons, Ltd., Valley-
field, P.Q.

COTTONADES

Hamilton Cotton Co., Hamilton, Ont.

COUPLERS

*Canadian Steel Foundries, Ltd.,
Welland, Ont.

COUPLINGS

*Canadian Bond Hanger & Coup-
ling Co., Alexandria, Ont.
*Dodge Mfg. Co., Ltd., Toronto.

CRANES

*Northern Crane Works, Walk-
erville, Ont.

CRANKSHAFTS

Canada Forge Co., Ltd., Welland,
Ont.

CREAM CHEESE, Ingersoll
The Ingersoll Packing Co., Limited,
Ingersoll, Ont.

CREAM SEPARATORS AND MILK**CLARIFIERS**

De Laval Dairy Supply Co., Peter-
boro, Ont.

The Renfrew Machinery Co., Ltd.,
Renfrew, Ont.

**CREAMERY AND CHEESE FAC-
TORY MACHINERY AND SUP-
PLIES**

De Laval Dairy Supply Co., Ltd.,
Peterboro, Ont.

CREOSOTED MATERIALS

*The Barrett Co., Ltd., Toronto and
Montreal.

CRUSHED STONE

The Hagersville Contracting Co.,
Limited, Hagersville, Ont.

CRUSHING ROLLS

*Jenckes Machine Co., Sherbrooke,
Que.

CUPOLAS

*Sheldons, Ltd., Galt, Ont.
*Northern Crane Works, Limited,
Walkerville, Ont.

CUPS, presentation

Standard Silver Co., Toronto.

CUPS, grease and oil

*The Canadian Winkley Co., Ltd.,
Windsor, Ont.

CURLED HAIR

*Delany and Pettit, Ltd., Toronto.

CURTAINS, chenille

Hamilton Cotton Co., Hamilton,
Ont.

CUTLERY

Standard Silver Co., Toronto.

CUTTERS, (Machine)

*Pratt & Whitney Co., Dundas.

DECK PLUGS (electric marine)

*Crouse-Hinds Co., Ltd., Toronto.

DENIMS

Hamilton Cotton Co., Hamilton,
Ont.

DERAILS

*Canadian Hart Wheels, Limited,
Hamilton, Ont.

DESIGNERS

Ontario Engraving Co., Hamilton,
Ont.

**DESIGNERS and PRINTERS OF
BOOKLETS, ETC.**
Grip, Ltd., Toronto.

DESKS

*Office Specialty Mfg. Co., Ltd.,
Newmarket, Ont.

DESSICATED VEGETABLES
Grahams Limited, Belleville.

DIES

*John Whitfield Co., Toronto.

DINING ROOM SUITES

The George McLagan Furniture
Co., Limited, Stratford, Ont.

DIES

*Butterfield & Co., Rock Island,
P.Q.

*Pratt & Whitney Co., Dundas.

DISINFECTING APPARATUS
Sprimotor Co., London, Ont.

DOOR HANGERS

*Richards Wilcox Canadian Co.,
Ltd., London, Ont.

DREDGES

*M. Beatty & Sons, Limited, Wel-
land, Ont.

DRESSING, belt

Sadler & Haworth, Montreal, Que.

DRESS AND CLOAK TRIMMINGS
J. Henry Peters Co., 1 Mincing St.,
Toronto.

DRIFT BOLT DRIVERS

*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

DRILL PRESSES

*Canada Machinery Corporation,
Limited, Galt, Ont.

DRILL SHARPENERS

*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

DRILLS

*John Morrow Screw & Nut Co.,
Limited, Ingersoll, Ont.

*Pratt & Whitney Co., Dundas.

DRILLS, core
*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

DRILLS, pneumatic
*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

DRILLS, rock
*Canadian Ingersoll Rand Co.,
Montreal, Que.

DRIFT BOLTS OR SPIKES
London Rolling Mill Co., Limited,
London, Ont.

DROP FORGINGS
*Canadian Billings & Spencer, Ltd.,
Welland, Ont.

DROP HAMMERS
*Canada Machinery Corporation,
Limited, Galt, Ont.

DRUMS, steel, and containers

*Smart-Turner Machine Co., Ltd.,
Hamilton, Ont.

DRY CELLS, electric
Canadian Carbon Co., Limited, To-
ronto.

DRY COLORS

P. D. Dods & Co., Ltd., Montreal.

The Imperial Varnish & Color Co.,
Limited, Toronto.

R. C. Jamieson & Co., Ltd., Mon-
treal, Que.

Standard Paint & Varnish Co.,
Ltd., Windsor, Ont.

DUMB WAITERS

Turnbull Elevator Mfg. Co., To-
ronto.

DURABLE WIRE ROPE

The Dominion Wire Rope Co., Ltd.,
Montreal, Que.

DYNAMITE

Canadian Explosives, Limited, Mon-
treal, Que.

DYNAMOS

Consolidated Electric Co., Limited,
Toronto.

*Jones & Moore Electric Co., Ltd.,
Toronto.

*The Canadian Crocker-Wheeler
Co., Limited, St. Catharines, Ont.

DYNAMOS, plating
*Jones & Moore Electric Co., Ltd.,
Toronto.

EIDERDOWN

Galt Knitting Co., Ltd., Galt.

ELECTRIC APPLIANCES

*Canadian Crocker-Wheeler Co.,
Limited, St. Catharines, Ont.

*Canadian Westinghouse Co., Ltd.,
Hamilton, Ont.

**ELECTRIC APPLIANCES, fibre, all
purposes**
*Beveridge Paper Co., Limited,
Montreal.

ELECTRICAL COMPOUNDS
Standard Paint Co. of Canada, Ltd.,
Montreal, Que.

**ELECTRIC COOKING APPLI-
ANCES**
*Canadian General Electric Com-
pany, Ltd., Toronto.

ELECTRIC LAMPS
Packard Electric Co., Limited,
Toronto.

ELECTRIC PLATE WARE
Roden Bros., Ltd., Toronto.

ELECTRIC BATTERIES
Canadian Carbon Co., Limited,
Toronto.

ELECTRIC BRANDING TOOLS
*The Clemens Electrical Corpora-
tion of Canada, Ltd., Hamilton, Ont.

ELECTRIC RAILWAY EQUIPMENT
*Crouse-Hinds Co., Ltd., Toronto.

ELECTROPLATING
*United Brass & Lead, Ltd., Toronto

ELECTRO PLATING
Central Press Agency, Toronto.

ELECTRICAL SUPPLIES
*Canadian General Electric Com-
pany, Ltd., Toronto.

*Canadian Westinghouse Co., Ltd.,
Hamilton, Ont.

*Jones & Moore Electric Co., Ltd.,
Toronto.

*Northern Electric Co., Limited,
Montreal, Que.

ELECTRIC SOLDERING IRON
*The Clemens Electrical Corpora-
tion of Canada, Ltd., Hamilton, Ont.

**ELECTRO-SILVER PLATED
WARE**
Standard Silver Co., Toronto.

ELEVATING MACHINERY
*Canadian Link-Belt Co., Toronto.

*Canadian Mathews Gravity Carrier
Co., Toronto.

ELEVATORS
*Jenckes Machine Co., Sherbrooke,
Que.

*Mackinnon, Holmes & Co., Ltd.,
Sherbrooke, P.Q.

Turnbull Elevator Manufacturing
Company, Toronto.

*The Waterous Engine Works Co.,
Ltd., Brantford, Ont.

*Northern Crane Works, Limited,
Walkerville, Ont.

**ELEVATORS FOR ALL PUR-
POSES**
*The Waterous Engine Works Co.,
Limited, Brantford, Ont.

ELEVATOR GATES AND DOORS
Turnbull Elevator Mfg. Co., Ltd.,
Toronto.

ELEVATOR GUARDS
*The Geo. B. Meadows, Toronto
Iron and Brass Goods Works Co.,
Limited, Toronto.

*Canada Wire and Iron Works,
Hamilton, Ont.

ELEVATORS, hydraulic and electric
John McDougall Caledonian Iron
Works Co., Ltd., Montreal, Que.

EMERY DRESSERS and STANDS
*Canadian Hart Wheels, Limited,
Hamilton, Ont.

EMERY GRINDERS
*Canadian Hart Wheels, Limited,
Hamilton, Ont.

EMERY WHEELS
*Canadian Hart Wheels, Limited,
Hamilton, Ont.

EMERY WHEEL GUARDS
*Canadian Hart Wheels, Limited,
Hamilton, Ont.

ENAMELS
R. C. Jamieson & Co., Limited,
Montreal, Que.

The Imperial Varnish & Color Co.,
Ltd., Toronto.

**ENAMEL MANUFACTURERS AND
DECORATORS**
Standard Paint & Varnish Co.,
Ltd., Windsor, Ont.

ENAMEL AND TIN WARE
McClary Mfg. Co., London, Ont.

ENGINES
*E. Leonard & Sons, London, Ont.

*Goldie & McCulloch Co., Limited,
Galt, Ont.

J. & R. Weir, Montreal, Que.

*Jenckes Machine Co., Sherbrooke,
Que.

*Polson Iron Works, Limited, To-
ronto.

*Sheldons, Ltd., Galt, Ont.

*The Waterous Engine Works Co.,
Limited, Brantford, Ont.

ENGINES, gas and gasoline
*Gould-Shapley-Muir Co., Limited,
Brantford, Ont.

*Hamilton Motor Works Ltd.,
Hamilton.

*Massey-Harris Co., Ltd., Toronto.

**ENGINES, gasoline, tractor, plowing
and threshing**
*Sawyer-Massey Co., Ltd., Hamil-
ton, Ont.

ENGINES, hoisting
*M. Beatty & Sons, Welland, Ont.

*The Waterous Engine Works Co.,
Limited, Brantford, Ont.

**ENGINES, oil, gasoline and kero-
sene**
*Gilson Manufacturing Co., Ltd.,
Guelph.

**ENGINES, steam plowing and
threshing**
Sawyer-Massey Co., Limited, Ham-
ilton, Ont.

ENGRAVERS
Grip, Limited, Toronto.

Ontario Engraving Co., Hamilton.

**ELECTRICAL AND GAS
FIXTURES**
The Garth Co., Montreal, Que.

The James Morrison Brass Mfg.
Co., Limited, Toronto.

*Tallman Brass and Metal Co.,
Hamilton, Ont.

**ELECTRIC HEATING APPLI-
ANCES**
*Canadian General Electric Com-
pany, Ltd., Toronto.

ELEVATORS
*Mackinnon, Holmes & Co., Ltd.,
Sherbrooke, P.Q.

ENGRAVERS, half-tone
Grip, Limited, Toronto.

Ontario Engraving Co., Hamilton,
Ont.

ENGRAVERS, wood
Ontario Engraving Co., Hamilton,
Ont.

ENGRAVERS AND PRINTERS
steel plate
American Bank Note Co., Ottawa,
Ont.

ENGRAVERS AND PRINTERS
banknote
American Bank Note Co., Ottawa,
Ont.

ENGRAVING
*J. L. Jones Engraving Company,
Toronto.

**ENGRAVING, copper and steel
plate**
Pritchard-Andrews Co. of Ottawa,
Limited, Ottawa, Ont.

**ENSILAGE and STRAW
CUTTERS**
J. Fleury's Sons, Aurora, Ont.

Ontario Wind Engine & Pump Co.,
Ltd., Toronto.

EVAPORATED APPLES
Grahams Limited, Belleville.

ENVELOPES
Barber-Ellis Co., Ltd., Toronto.

Canada Envelope Co., Montreal,
Que.

EXCELSIOR
*Delany & Pettit, Ltd., Toronto.

EXCELSIOR PADS

*Delany & Pettit, Ltd., Toronto.
 *Parmenter & Bulloch Co., Limited,
 Gananoque, Ont.

EXPERTS IN PATENT CAUSES

Ridout & Maybee, Toronto.

EXPLOSIVES, high

Canadian Explosives Ltd., Montreal.

FACE PLATE JAWS

Ker & Goodwin, Brantford, Ont.

FACTORY SUPPLIES, cheese and

creamery
 De Laval Dairy Supply Co., Ltd.,
 Montreal, Que.

FANS

*Sheldons, Limited, Galt, Ont.
 *The Canadian Blower & Forge Co.,
 Limited, Kitchener, Ont.

FASTENERS, belt

*Sadler & Haworth, Montreal, Que.

FELTS, pulp and paper makers

Ayers Limited, Lachute Mills, P.Q.
 *Beveridge Paper Co., Limited,
 Montreal.

FENCES AND GATES

*Dennis Wire & Iron Works Co.,
 London, Ont.
 *Canada Wire and Iron Works,
 Hamilton, Ont.

FENCING AND GATES, woven

wire

*Canada Wire and Iron Goods Co.,
 Hamilton, Ont.

FENCING, wire

C. H. Johnson & Sons, Limited,
 Montreal, Que.

FIBRE PAIS

*The E. B. Eddy Co., Ltd., Hull,
 Que.

FIBRE, VULCANIZED, hard and

flexible
 *Beveridge Paper Co., Limited,
 Montreal.

FILES

Henry Disston & Sons, Limited,
 Toronto.

*The Nicholson File Co., Port Hope.

FILING CABINETS

*Office Specialty Co., Newmarket.

FILING EQUIPMENT, wood & steel

*Office Specialty Mfg. Co., Ltd.,
 Newmarket, Ont.

FILING SYSTEMS

*Office Specialty Mfg. Co., Ltd.,
 Newmarket, Ont.

FILTER PAPERS

*Beveridge Paper Co., Limited,
 Montreal.

FIRE ALARMS

*Northern Electric Co., Limited,
 Montreal, Que.

FIRE APPARATUS

*R. S. Bickle Co., Woodstock, Ont.

FIRE BRICK

Dominion Fire Brick and Clay Pro-
 ducts, Ltd., Moose Jaw

FIRE BRICK AND CEMENT

*Beveridge Paper Co., Ltd., Mon-
 treal.

FIRE BRICK AND CLAY

The Dominion Fire Brick and Clay
 Products, Ltd., Moose Jaw, Sask.

FIRE BRICK, JOINTLESS

*Beveridge Paper Co., Ltd., Mont-
 real.

FIRE DOOR HARDWARE

*Richards Wilcox Canadian Co.,
 Limited, London, Ont.

FIRE DOORS

*A. B. Ormsby Co., Ltd., Toronto.
 *The Pedlar People Limited,
 Oshawa.

FIRE ENGINES

*R. S. Bickle Co., Woodstock, Ont.
 Watrous Engine Works Co., Lim-
 ited, Brantford, Ont.

FIRE ESCAPES

*Canada Wire and Iron Goods Co.,
 Hamilton, Ont.
 *Dennis Wire & Iron Works Co.,
 London, Ont.

*McGregor & McIntyre, Ltd., To-
 ronto.

FIRE EXTINGUISHERS

*A. B. Ormsby Co., Ltd., Toronto.
 *Booth-Coulter Copper and Brass
 Co., Limited, Montreal, Que.

*The Bennett & Wright Co., Ltd.,
 Toronto, Ont.

FIRE FIGHTING APPARATUS

*The Watrous Engine Works Co.,
 Limited, Brantford, Ont.

FIRE HOSE

*Canadian Consolidated Rubber
 Co., of Canada, Limited, Montreal,
 Que.

Dunlop Tire & Rubber Goods Co.,
 Ltd., Toronto.

*Gutta Percha and Rubber, Ltd.,
 Toronto.

FIRE PREVENTION MATERIAL

*Chicago Bridge & Iron Works,
 Bridgeburg, Ont.

*Eureka Mineral Wool & Asbestos
 Co., Toronto.

*The Bennett & Wright Co., Ltd.,
 Toronto, Ont.

FIRE PROOF WINDOWS AND

DOORS

*A. B. Ormsby Co., Ltd., Toronto.

*Pedlar People, Ltd., Oshawa, Ont.

*Trussed Concrete Steel Co. of
 Canada, Limited, Walkerville, Ont.

FIRE SPRINKLER SYSTEMS

*Chicago Bridge & Iron Works,
 Bridgeburg, Ont.

*The Bennett & Wright Co., Ltd.,
 Toronto, Ont.

*Purdy Mansell Co., Toronto.
 *H. G. Vogel Co., Montreal, Que.

FIRE AND WATER DEPARTMENT

SUPPLIES

*Chicago Bridge & Iron Works,
 Bridgeburg, Ont.

The Garth Co., Montreal, Que.

FISH, Atlantic Sea-Foods
 Maritime Fish Corporation Ltd.,
 Montreal, Que.

FITTINGS FOR SOIL PIPE

Anthes Foundry, Ltd., Toronto.

FITTINGS, steam

Warden King, Ltd., Montreal, Que.

FIXTURES

*Crouse-Hinds Co., Ltd., Toronto.

FLAGS

*Scythies & Co., Limited, Toronto.

FLASHLIGHTS

Canadian Carbon Co., Toronto.

FLEXIBLE COUPLINGS

*Canadian Bond Hanger & Coup-
 ling Co., Alexandria, Ont.

FLOODLIGHTS (electric)

*Crouse-Hinds Co., Ltd., Toronto.

FLOORING, hardwood

Seaman Kent Co., Ltd., Meaford,
 Ont.

FLOUR MILL MACHINERY

*Canadian Allis-Chalmers, Limited,
 Toronto.

FLUE LINERS

Standard Clay Products, Ltd., St.
 Johns, Que.

FORGES

*Canadian Blower & Forge Co., Ltd.,
 Kitchener, Ont.

*Sheldons, Limited, Galt, Ont.

FORGINGS

Canada Forge Co., Ltd., Welland.

*The Steel Co. of Canada, Limited,
 Hamilton, Ont.

FORGINGS, drop

*Canadian Billings & Spencer, Ltd.,
 Welland, Ont.

*Dominion Forge and Stamping
 Co., Walkerville, Ont.

FOUNDRY EQUIPMENT

*Northern Crane Works, Limited,
 Walkerville, Ont.

FOUNTAIN FRUITS and Juices

J. J. McLaughlin, Ltd., Toronto.

FOUNTAINS, drinking

*Mueller Mfg. Co., Ltd., Sarnia.

FRICTION CLUTCH PULLEYS

*Dodge Mfg. Co., Ltd., Toronto.

FROGS AND CROSSINGS,

manganese
 Canadian Ramapo Iron Works, Ltd.,
 Niagara Falls, Ont.

FUEL

Standard Fuel Co., Toronto.

FUR GARMENTS, men's and

women's
 Holt, Renfrew, Ltd., Quebec.

FUR GOODS

John W. Peak & Co., Limited,
 Montreal, Que.

FUR TRIMMINGS, ornaments and

buttons
 J. Henry Peters Co., 1 Mincing St.,
 Toronto.

FURNACES

McClary Mfg. Co., London, Ont.
 The Jas. Smart Mfg. Co., Limited,
 Brockville, Ont.

FURNACES, hot air

Bedford Stove Co., Bedford, Que.

FURNACES, oil burning

*Mechanical Engineering Works,
 Montreal, Que.

FURNITURE, hall

The George McLagan Furniture Co.,
 Limited, Stratford, Ont.

FURNITURE, office

The Canadian Office and School
 Furniture Co., Ltd., Preston, Ont.

FURNITURE, reed and rattan

Imperial Rattan Co., Ltd., Strat-
 ford, Ont.

FUSE BOXES

*Crouse-Hinds Co., Ltd., Toronto.

FUSE PLUGS AND FUSES, refill-

able
 *The Clemens Electrical Corpora-
 tion of Canada, Ltd., Hamilton, Ont.

FUSES

*Economy Fuse and Mfg. Co., Mon-
 treal.

GALVANIZED IRON

*A. C. Leslie & Co., Montreal.

GALVANIZED SHEETS

*Dominion Sheet Metal Co., Ham-
 ilton, Ont.

GALVANIZERS

Acme Stamping & Tool Works, Ltd.,
 Hamilton, Ont.

*Ontario Wind Engine and Pump
 Co., Limited, Toronto.

*The Pedlar People, Ltd., Oshawa.

GASOLINE ENGINES

*Ontario Wind & Pump Co., Ltd.,
 Toronto.

De Laval Dairy Supply Co., Ltd.,
 Peterboro, Ont.

GASOLINE FIRE ENGINES

*The Watrous Engine Works Co.,
 Ltd., Brantford, Ont.

GASOLINE MOTORS, "Imperial"

Marine
 Bruce Stewart & Co., Ltd., Char-
 lottetown, P.E.I.

GASOLINE, storage systems

*Steel Trough and Machine Co., Ltd.,
 Tweed, Ont.

GASOLINE STORAGE SYSTEMS,

special underground
 S. F. Bowser & Co., Toronto.

GASOLINE

*The Imperial Oil Co., Limited,
 Toronto.

GAUGES

*Brown Engineering Corporation,
 Toronto.

*John Whitfield Co., Toronto.

GEARS, cut

*Brown Engineering Corporation,
 Toronto.

*Hamilton Gear & Machine, Toronto.

*Winnipeg Gear & Engineering
 Co., Ltd., Winnipeg.

GEARS, noiseless fibre, also rein-

forced
 *Beveridge Paper Co., Limited,
 Montreal.

GELATINE

Canada Gelatine Co., Ltd., Brant-
 ford.

GENERATORS

*Canadian Crocker-Wheeler Co.,
 Ltd., St. Catharines, Ont.

*Canadian Westinghouse Co., Ltd.,
 Hamilton, Ont.

GENERATORS, electric

*Canadian General Electric Com-
 pany, Ltd., Toronto.

GINs

The Melchers Gin & Spirits Dis-
 tillery Co., Ltd., Montreal, Que.

GLASSWARE

Dominion Glass Co., Limited, Mon-
 treal, Que.

GLASSWARE, cut

Roden Bros., Ltd., Toronto.

GLASS FOR BUILDINGS

Toronto Plate Glass Importing Co.,
 Limited, Toronto.

GLASS BENDERS

Toronto Plate Glass Importing Co.,
 Limited, Toronto.

GLASS, mirror

Toronto Plate Glass Importing Co.,
 Limited, Toronto.

GLOVES AND MITTS

*A. R. Clarke & Co., Ltd., Toronto.

GLUE

Canada Glue Co., Ltd., Brantford.

GOLD-FILLED WIRE AND

PLATE
 Canadian Seamless Wire Co., To-
 ronto.

GOLD AND SILVER REFINERS

Canadian Seamless Wire Co., To-
 ronto.

GRAIN CRUSHERS (Rapid Easy)

J. Fleury's Sons, Aurora, Ont.

GRAPE JUICE

J. J. McLaughlin, Ltd., Toronto.

GRATES

The Goldie & McCulloch Co., Ltd.,
 Galt, Ont.

GRAVITY CARRIERS

*Canadian Mathews Gravity Carrier
 Co., Toronto.

GRILLES, metal

*Canada Wire & Iron Goods Co.,
 Hamilton, Ont.

HAMMERS

*Dennis Wire & Iron Works Co.,
 London, Ont.

GRINDER, bench

*Canadian Bond Hanger & Coup-
 ling Co., Alexandria, Ont.

GRINDERS, portable

*Canadian Ingersoll-Rand Co., Ltd.,
 Montreal, Que.

GRINDERS, Pedestal and Bench

*Canadian Hart Wheels, Limited,
 Hamilton, Ont.

GRINDING and Polishing Machinery

*Canadian Hart Wheels, Limited,
 Hamilton, Ont.

GRINDING WHEELS

*Canadian Hart Wheels, Limited,
 Hamilton, Ont.

*The Dominion Abrasive Wheel
 Co., Limited, New Toronto.

GRINDSTONES

*Richards-Wilcox Canadian Co.,
 Limited, London, Ont.

GUARDS (Condulet)

*Crouse-Hinds Co., Ltd., Toronto.

GUNN SECTIONAL BOOKCASES

The Geo. McLagan Furniture Co.,
 Limited, Stratford, Ont.

GUY ANCHORS

B. J. Coghlin Co., Ltd., Montreal.

GUY RODS

*Crouse-Hinds Co., Ltd., Toronto.

GYPSON, crushed

*Albert Mfg. Co., Hillsborough, N.B.

GYPSON PRODUCTS

*Manitoba Gypsum Co., Ltd., Win-
 nipeg, Man.

De Laval Dairy Supply Co., Ltd.,
 Peterboro, Ont.

HACK SAW BLADES

*E. C. Atkins & Co., Inc., Hamil-
 ton, Ont.

HACK SAW FRAMES

*E. C. Atkins & Co., Inc., Hamil-
 ton, Ont.

HACK SAW MACHINES

*E. C. Atkins & Co., Inc., Hamil-
 ton, Ont.

HALL FURNITURE

The Geo. McLagan Furniture Co.,
 Limited, Stratford, Ont.

HAMS

F. W. Fearman Co., Ltd., Hamil-
 ton, Ont.

HANDLES (Axe, pick, sledge ham-

mers, etc.)
 The Lachute Shuttle Co., Limited,
 Lachute Mills, P.Q.

HEATERS, feed water

*Darling Bros., Ltd., Montreal.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

HEATING APPLIANCES

*C. A. Dunham Co., Ltd., Toronto.
*Darling Bros., Ltd., Montreal.
*Sheldons, Limited, Galt, Ont.
*The Canadian Blower & Forge Co., Limited, Kitchener, Ont.

HEATING SYSTEMS

*C. A. Dunham Co., Ltd., Toronto.

HEMLOCK, union and oak sole
Breithaupt Leather Co., Ltd., Kitchener, Ont.

HESSIANS

The Canadian Bag Co., Limited, Montreal, Que.
*Seythes & Co., Limited, Toronto.

HINGES

*The Steel Co. of Canada, Limited, Hamilton, Ont.

HOISTS

*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOISTS, electric and pneumatic

*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOISTING MACHINERY

*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOSE, fire

*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd., Toronto.

HOSE, half, Imperial

Kingston Hosiery Co., Ltd., Kingston, Ont.

HOSE, rubber

*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Limited.

HYDRAULIC PRESSES

*Bawden Machine Co., Limited, Toronto.

*William R. Perrin, Ltd., Toronto.

HYDRO ELECTRIC PLANTS

*Canadian Allis-Chalmers, Limited, Toronto.

ICE CREEPERS

Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ICE-MAKING MACHINERY

The Linde Canadian Refrigeration Co., Limited, Montreal, Que.

INCUBATORS & BROODERS

Lee Mfg. Co., Ltd., Pembroke, Ont.

INGOT METALS

*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

INJECTORS, automatic and autopoitive

Penberthy Injector Co., Limited, Windsor, Ont.

INSERTED TOOTH SAWS

*E. C. Atkins & Co., Inc., Hamilton, Ont.

INSULATING COMPOUNDS

The Imperial Varnish & Color Co., Ltd., Toronto.

INSULATING PAPER AND FIBRE

*Beveridge Paper Co., Limited, Montreal.

INSULATORS

*Crouse-Hinds Co., Ltd., Toronto.

INTERLOCKING RUBBER TILING

*Gutta Percha & Rubber Mfg. Co., of Toronto, Limited, Toronto.

INVERTS

Standard Clay Products, Ltd., St. Johns, Que.

IRON

*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.

IRON, refined bar

Starr Mfg. Co., Ltd., Dartmouth, N.S.

IRON AND STEEL BARS

*Burlington Steel Co., Ltd., Hamilton, Ont.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

IRON STAIRWAYS

*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*McGregor & McIntyre, Ltd., Toronto.

IRONWORK, architectural

*Canadian Allis-Chalmers, Limited, Toronto.

*Canada Wire & Iron Goods Co., Hamilton, Ont.

IRONWORK, ornamental

*Canada Wire & Iron Goods Co., Hamilton, Ont.

IRON, LEAD AND PUTTY

A. R. Whittall, Montreal, Que.

JACKS

Globe Engineering Co., Ltd., Hamilton

JAM, canned goods, etc.

E. D. Smith & Son, Limited.

JAPANS, enamels, etc.

A. Muirhead Co., Ltd., Toronto.
The Imperial Varnish & Color Co., Ltd., Toronto.

JIGS AND TOOLS

*Brown Engineering Corporation, Toronto.

JOINTERS

*Canada Machinery Corporation, Limited, Galt, Ont.
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

JELLY POWDER

S. H. Ewing & Sons, Montreal, Que.

JEWELRY, enamelled souvenir

Caron Bros., Montreal, Que.

JEWELRY, gold-filled

Caron Bros., Montreal, Que.

JOIST HANGERS

*Richards-Wilcox Canadian Co., Limited, London, Ont.

JUNCTION BOXES, cable

*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

KELSEY WARM AIR**GENERATOR**

The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

KILNS

*Sheldons, Limited, Galt, Ont.

KINDLING

Standard Fuel Co., Toronto.

KNIFE GRINDERS

*Canada Machinery Corporation, Limited, Galt, Ont.

*W. H. Banfield & Sons, Toronto.

KNITTED GOODS

*Penman's, Limited, Paris, Ont.

KNIVES

*Galt Knife Co., Ltd.
Henry Disston and Sons, Toronto
The Peter Hay Knife Co., Limited, Galt, Ont.

Simonds Canada Saw Co., Limited, Montreal, Que.

KNIVES, pulp and paper

Henry Disston and Sons, Toronto.
The Peter Hay Knife Co., Limited, Galt, Ont.

KODAKS AND PHOTOGRAPHIC**SUPPLIES**

Canadian Kodak Co., Ltd., Toronto

LABELS

Lawson & Jones, Ltd., London, Ont.

LABELS, lithographed
Harris Lithographing Co., Toronto.

LACE LEATHER

F. O. McCordick, St. Catharines, Ont.

*Sadler & Haworth, Montreal, Que.
*The D. K. McLaren Belting Co., Limited, Montreal, Que.

*The J. C. McLaren Belting Co., Limited, Montreal, Que.

LADDERS

Stratford Mfg. Co., Ltd., Stratford, Ont.

LADDERS, step.

*Otterville Mfg. Co., Ltd., Otterville, Ont.

LADLES, foundry

*Northern Crane Works, Limited, Walkerville, Ont.

LAGEE

E. L. Drewry, Winnipeg, Man.

LAMP GLOBES

*Crouse-Hinds Co., Ltd., Toronto.

LARD

F. W. Fearman Co., Ltd., Hamilton, Ont.

LATH

The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

LATHE CHUCKS

Ker & Goodwin, Brantford, Ont.

LATHE-DOGS

Canadian Billings & Spencer, Ltd., Welland, Ont.

LATHES

*Canada Machinery Corporation, Limited, Galt, Ont.

LAUNCHES

Peterboro Canoe Co., Ltd., Peterboro, Ont.

LAWN MOWERS

Taylor-Forbes Co., Limited, Guelph, Ont.

LAWN SWINGS

Stratford Mfg. Co., Ltd., Stratford, Ont.

LAVATORIES, enameled

Amherst Foundry Co., Limited, Amherst, N.S.

LAUNDRY SINKS

Amherst Foundry Co., Limited, Amherst, N.S.

LEAD GRINDERS

Benjamin Moore & Co., Limited, Toronto.

LEAD SHEET

Toronto Plate Glass Importing Co., Limited, Toronto.

LEAD PIPE

*The Steel Co. of Canada, Limited, Hamilton, Ont.

Toronto Plate Glass Importing Co., Limited, Toronto.

*The Canada Metal Co., Toronto.

*United Brass & Lead, Ltd., Toronto

LEATHER

The Robson Leather Co., Limited, Oshawa, Ont.

LEATHER, bookbinders'

Clarke & Clarke, Ltd., Toronto.

LEATHER, fancy

Clarke & Clarke, Ltd., Toronto.

LEATHER GOODS

Lamontagne, Ltd., Montreal, Que.

LEATHER, hemlock, union and oak sole
The Breithaupt Leather Co., Ltd., Kitchener, Ont.

LEATHER, patent colt and side

leather
*A. R. Clarke & Co., Ltd., Toronto.

LEATHER, sheep skin, etc.

Clarke & Clarke, Ltd., Toronto.

LEATHER, upholstering

Clarke & Clarke, Ltd., Toronto.

LEATHER, upper

A. Davis & Son, Ltd., Kingston, Ont.

LIGHTS (marine, side and port)

*Crouse-Hinds Co., Ltd., Toronto.

LINK BELT, Ewart, and sawmill

riveted
*Canadian Link-Belt Co., Toronto.

LINK BELTING

*The Dodge Mfg. Co., Ltd., Toronto.

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

LINOLEUM

Dominion Oil Cloth Co., Limited, Montreal, Que.

LITHOGRAPHED BUSINESS**STATIONERY**

Business Systems, Ltd., Toronto.

LITHOGRAPHED TIN WARE

*MacDonald Mfg. Co., Limited, Toronto.

LITHOGRAPHERS

American Bank Note Company, Ottawa, Ont.

Harris Lithographing Co., Toronto.

LOCKERS

*Canada Wire & Iron Works Co., Hamilton, Ont.

*Dennis Wire & Iron Works Co., London, Ont.

*Geo. B. Meadows, Wire, Iron and Brass Works Co., Toronto.

LOCOMOTIVE BLOCKS

Standard Clay Products, Limited, St. Johns, Que.

LOCOMOTIVES, industrial

*Montreal Locomotive Works, Ltd., Montreal, Que.

LOCOMOTIVE & MARINE BRASS**WORKS**

The James Morrison Brass Mfg. Co., Limited, Toronto.

*United Brass & Lead, Ltd., Toronto

LOOSE LEAF, BINDERS AND**FORMS**

Business Systems, Ltd., Toronto.

LOOSE LEAF SYSTEMS

Copeland-Chatterson Co., Limited, Brampton, Ont.

LOOSE LEAF SUPPLIES

The Esdale Press, Ltd., Edmonton.

LUBRICATORS, steam sight feed

Penberthy Injector Co., Limited, Windsor, Ont.

LUGS, for silos and water tanks

*Ontario Wind Engine & Pump Co., Ltd., Toronto.

*Otterville Mfg. Co., Ltd., Otterville, Ont.

LUMBER

*Brown Corporation, La Tuque, Que.

The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

G. & J. Esplen, Montreal, Que.

LUMBER, asbestos

*Eureka Mineral Wool & Asbestos Co., Toronto.

LUMBER, spruce and pine, cedar
railway ties and shingles

Bathurst Lumber Co., Ltd., Bathurst, N.B.

LUMBERING BLANKETS

Slingsby Mfg. Co., Ltd., Brantford, Ont.

LUMBER, red pine and spruce
Gillies Bros., Ltd., Braeside, Ont.

LUMBER, spruce, fir, larch and cedar
Fernie Lumber Co., Ltd., Fernie, B.C.

LUMBER, white pine

Gillies Bros., Ltd., Braeside, Ont.

MACHINE KNIVES

*Galt Knife Co., Ltd.

*E. C. Atkins & Co., Inc., Hamilton, Ont.

MACHINE TOOLS

*Canada Machinery Corporation, Limited, Galt, Ont.

*John Bertram & Sons Co., Ltd., Dundas, Ont.

*United Brass & Lead, Ltd., Toronto

MACHINE WORK, special

*United Brass & Lead, Ltd., Toronto

MACHINE WORK, special and repairs
*Canadian Rumely Co., Limited, Toronto, Ont.

MACHINERY, conveying

*Canadian Link-Belt Co., Toronto.

*Canadian Mathews Gravity Carrier Co., Limited, Toronto.

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

MACHINERY, flour mill

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

MACHINERY, grinding

*Canadian Hart Wheels, Limited, Hamilton, Ont.

MACHINERY, hoisting, etc.

*Polson Iron Works, Limited, Toronto.

J. & R. Weir, Montreal, Que.

*M. Beatty & Sons, Ltd., Welland.

*Northern Crane Works, Limited, Walkerville, Ont.

MACHINERY, ice cream

J. J. McLaughlin, Ltd., Toronto.

MACHINERY, iron working

*Canada Machinery Corporation, Limited, Galt, Ont.

*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, pulp mill

*The Watrous Engine Works Co., Limited, Brantford, Ont.

MACHINERY, punching and shearing.
*Canada Machinery Corporation, Limited, Galt, Ont.

*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, railroad and car-shop
*Canada Machinery Corporation, Limited, Galt, Ont.

*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, roadmaking

Sawyer-Massey Co., Limited, Hamilton, Ont.

*The Watrous Engine Works Co., Limited, Brantford, Ont.

MACHINERY, sawmill

The E. Long Mfg. Co

- MACHINERY, special**
Bawden Machine Co., Limited, Toronto.
- MACHINERY, tannery**
W. P. Plant, Hastings, Ont.
- MACHINERY, transmission**
*Canadian Bond Hanger and Coupling Co., Ltd., Alexandria, Ont.
*Dodge Mfg. Co., Ltd., Toronto.
*Goldie & McCulloch Co., Limited, Galt, Ont.
- MACHINERY, woodworking**
*Canada Machinery Corporation, Limited, Galt, Ont.
*Yates, P. B., Machine Co., Ltd., Hamilton, Ont.
Preston Woodworking Machinery Co., Ltd., Preston.
*The Watrous Engine Works Co., Limited, Brantford, Ont.
- MACHINE WORK, special and repairs**
*Canadian Rumely Co., Ltd., Toronto, Ont.
- MACHINE WRENCHES**
*Canadian Billings & Spencer, Ltd., Welland, Ont.
- MACHINES, painting**
Spramotor Co., London, Ont.
- MAGNESITE**
Canadian Carbonate Co., Limited, Montreal, Que.
- MALT**
*Hiram Walker & Sons, Limited, Walkerville, Ont.
- MAPLE PRODUCTS**
*Maples, Limited, Toronto.
- MAPS AND MAP MOUNTING**
The Geo. M. Hendry Co., Limited, Toronto.
- MARTINGALE RINGS AND SLIDE LOOPS**
The Arlington Co. of Canada, Ltd., Toronto.
- MATCHERS**
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
- MATCHES**
*The E. B. Eddy Co., Ltd., Hull.
- MECHANICAL STOKERS**
*The Jones Underfeed Stoker Co., Ltd., Toronto.
- MEDICINES, patented and pharmaceutical**
Dr. Ed. Morin & Cie., Ltd., Quebec.
- METAL, babbit**
*Canada Metal Co., Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.
Alonso W. Spooner, Limited, Port Hope, Ont.
- METAL CEILING**
*The Pedlar People Limited, Oshawa.
- METAL LATH**
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
*The Pedlar People Limited, Oshawa.
- METAL PACKING**
*Garlock Packing Company, Hamilton, Ont.
- METAL, spinning and stamping**
The Booth-Coulter Copper and Brass Co., Limited, Toronto.
- METAL SAWS**
*E. C. Atkins & Co., Inc., Hamilton, Ont.
- METAL SHINGLES**
*The Pedlar People Limited, Oshawa.
- MILK DEALERS' MACHINERY AND SUPPLIES**
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.
- MILLBOARD, asbestos**
*Eureka Mineral Wool & Asbestos Co., Toronto.
- MILLING CUTTERS**
Pratt and Whitney Company of Canada, Dundas, Ont.
- MINING MACHINERY**
*Canadian Allis-Chalmers, Limited, Toronto.
- MITTS AND GLOVES (Indian, tan, red deerskins)**
Holt, Renfrew Ltd., Quebec, Que.
A. R. Clarke & Co., Ltd., Toronto
- MOCCASINS AND SLIPPERS (Indian tanned leathers)**
Holt Renfrew Ltd., Quebec, Que.
- MORTISERS**
*Canada Machinery Corporation, Limited, Galt, Ont.
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
- MOTOR CARS**
*Ford Co. of Canada, Ford, Ont.
- MOTORS, electric (alternating current)**
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*Canadian Crocker-Wheeler Co., Ltd., St. Catharines, Ont.
*T. & H. Electric Co., Hamilton.
- MOTORS, electric (direct current)**
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*T. & H. Electric Co., Hamilton.
- MOTORS, electric (repairing)**
Consolidated Electric Co., Limited, Toronto.
*T. & H. Electric Co., Hamilton.
- MOTORS, pneumatic**
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
- MOULDERS**
*Canada Machinery Corporation, Limited, Galt, Ont.
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
- NAILS**
*The Steel Co. of Canada, Limited, Hamilton, Ont.
- NAILS, copper**
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.
- NAILS, wire**
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.
The Graham Nail Works, Toronto.
- NAPHTHA**
*The Imperial Oil Co., Limited, Toronto.
- NICKEL OXIDE**
Coniagas Reduction Co., Limited, St. Catharines, Ont.
- NUTS**
*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.
*The National Acme Mfg. Co., Montreal, Que.
*The Steel Co. of Canada, Limited, Hamilton, Ont.
*United Brass & Lead, Ltd., Toronto
- OAKUM, plumbers, Canadian Navy Factory Waste and Metal Co., Montreal, Que.**
*Scythes & Co., Ltd., Toronto.
- OAT CRUSHERS AND FLAKERS**
J. Fleury's Sons, Aurora, Ont.
- OFFICE DESKS**
*Goderich Organ Co., Goderich, Ont.
- OFFICE EQUIPMENT**
*Office Specialty Co., Newmarket, Ont.
- OFFICE FURNITURE**
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
- OILS**
Brandram-Henderson, Ltd., Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.
Sherwin-Williams Co. of Canada, Limited, Montreal, Que.
- OIL FILTRATION AND CIRCULATING SYSTEMS**
S. F. Bowser & Co., Toronto.
- OIL STORAGE SYSTEMS, self-measuring**
S. F. Bowser & Co., Toronto.
- OIL COMPANIES**
*Canadian Oil Cos., Toronto.
Commercial Oil Co., Ltd., Hamilton, Ont.
*Imperial Oil Co., Toronto.
- OILS (Petroleum products)**
*British American Oil Co., Limited, Toronto.
*The Imperial Oil Co., Limited, Toronto.
- OTLS, road**
*The Barrett Co., Ltd., Toronto and Montreal.
- OILCLOTHS, floor and table**
Dominion Oil Cloth Co., Limited, Montreal, Que.
- ORGANS**
*Goderich Organ Co., Goderich, Ont.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.
Thomas Organ & Piano Co., Woodstock, Ont.
- ORGANS, pipe**
Casavant Freres, St. Hyacinthe, Que.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.
- ORGANS, parlor**
*Goderich Organ Co., Goderich, Ont.
- ORNAMENTAL IRON WORK**
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*The Geo. B. Meadows, Toronto
Iron and Brass Goods Works Co., Limited, Toronto.
*McGregor & McIntyre, Ltd., Toronto.
- OVENS, portable bake**
Bedford Stove Co., Bedford, Que.
Mackenzie & Co., Ottawa, Ont.
Peerless Overall Co., Rock Island, Que.
Walker Pant and Shirt Co., Walkerville and Chatham, Ont.
The Standard Shirt Co., Limited, Montreal, Que.
- OVERCOATINGS**
Rosamond Woollen Co., Almonte, Ont.
- OVERHEAD RUNWAYS**
*Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.
*Richards-Wilcox Canadian Co., Limited, London, Ont.
- OXY-ACETYLENE WELDING**
*L'Air Liquide Society, Montreal.
*The Prest-O-Lite Co., Inc., Toronto.
- OXYGEN**
*L'Air Liquide Society, Montreal.
- PACKERS, parchment papers, discs, shavings**
*Beveridge Paper Co., Limited, Montreal.
- PACKING BOXES**
Barchard & Co., Limited, Toronto.
- PACKING, engine**
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Garlock Packing Co., Hamilton.
- PACKING, rubber**
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Limited, Jenkins Bros., Ltd., Montreal, Que.
- PAIS AND TUBS, wooden**
The C. Beck Mfg. Co., Limited, Penetanguishene, Ont.
- PAINTERS' SUPPLIES**
A. Muirhead Co., Ltd., Toronto.
- PAINTS**
R. C. Jamieson & Co., Limited, Montreal, Que.
- PAINTS AND VARNISHES**
A. Muirhead Co., Ltd., Toronto.
Benjamin Moore & Co., Limited, Toronto.
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
The Imperial Varnish & Color Co., Limited, Toronto.
The Staneland Co., Ltd., Victoria, B.C.
A. Ramsay & Sons Co., Montreal, Que.
Standard Paint Co. of Canada, Limited, Montreal, Que.
- PAINTS, barn and bridge**
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
- PAINTS, preservative**
Standard Paint Co. of Canada, Limited, Montreal, Que.
*The Barrett Co., Ltd., Toronto and Montreal.
- PANELBOARDS**
*Crouse-Hinds Co., Ltd., Toronto.
- PAPER BAGS**
*Beveridge Paper Co., Limited, Montreal.
- PAPER, book**
Barber Paper & Coating Mills, Ltd., Georgetown, Ont.
- PAPER BOXES**
King Paper Box Co., Ltd., Montreal, Que.
*Rudd Paper Box Co., Limited, Toronto.
- PAPER, coated, book and label**
*Provincial Paper Mills, Limited, Georgetown, Ont.
- PAPEE, coated box board**
*Provincial Paper Mills, Limited, Georgetown, Ont.
- PAPER, coated cover**
*Provincial Paper Mills, Limited, Georgetown, Ont.
- PAPER, envelope**
Provincial Paper Mills Limited, Georgetown, Ont.
The Toronto Paper Manufacturing Co., Cornwall, Ont.
- PAPER, enamelled blotting**
*Provincial Paper Mills, Limited, Georgetown, Ont.
- PAPER, kraft and all wrappings, printings and specialties**
*Beveridge Paper Co., Limited, Montreal.
- PAPER, label**
*Provincial Paper Mills, Limited, Georgetown, Ont.
- PAPER, ledger**
*Howard Smith Paper Mills, Ltd., Montreal.
- PAPER, news**
*The Riordon Pulp and Paper Co., Montreal, Que.
- PAPER, super-book**
The Toronto Paper Manufacturing Co., Cornwall, Ont.
- PAPER, wall**
Stauntons, Ltd., Toronto.
- PAPER, Waxed**
Business Systems, Ltd., Toronto.
- PAPER, wrapping, printing and specialties**
*The Riordon Pulp and Paper Co., Montreal, Que.
- PAPER, writing**
The Toronto Paper Manufacturing Co., Cornwall, Ont.
Howard Smith Paper Mills, Limited, Montreal.
- PAPER, wrapping, printing and specialties**
*The Riordon Pulp and Paper Co., Montreal, Que.
- PAPERS, bond**
*Howard Smith Paper Mills, Ltd., Montreal.
- PAPERS, building**
Bathurst Lumber Co., Ltd., Bathurst, N.B.
*The Riordon Pulp and Paper Co., Montreal, Que.
- Standard Paint Co. of Canada, Ltd., Montreal, Que.**
- PARK SEATS**
Stratford Mfg. Co., Ltd., Stratford, Ont.
- PARLOR SUNDRIES**
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.
- PATENTS**
Fetherstonhaugh & Co., Toronto.
Ridout and Maybee, Toronto.
- PATENT LITIGATION**
Ridout and Maybee, Toronto.
- PAY ROLL AUDITS**
*International Business Machines, Limited, Toronto.
- PEAS AND BEANS FOR SEED**
W. P. Niles, Ltd., Wellington, Ont.
- PERFORATED METALS**
*Canada Wire & Iron Goods Co., Hamilton, Ont.
- PERFORATED MUSIC ROLLS**
The Otto Higel Co., Ltd., Toronto.
- PERFUMES AND TOILET PREPARATIONS**
Sovereign Perfumes Ltd., Toronto.
- PETROLEUM PRODUCTS**
*The Imperial Oil Co., Limited, Toronto.
- PHOTOMAILERS**
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.
- PIANOS**
Dominion Organ & Piano Co., Ltd., Bowmanville, Ont.
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.
- PIANO ACTIONS**
The Otto Higel Co., Ltd., Toronto.
- PIANO KEYS**
The Otto Higel Co., Ltd., Toronto.
- PIANOS, player**
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.
- PIANO, player actions**
The Otto Higel Co., Ltd., Toronto.
- PIANO STOOLS AND BENCHES**
*Goderich Organ Co., Goderich, Ont.
- PIG IRON**
*The Steel Co. of Canada, Limited, Hamilton, Ont.
- PINE DOORS, SASH, MOULDINGS, ETC.**
Wilson Bros., Limited, Collingwood, Ont.
- PINS, society, emblems and badges**
Caron Bros., Montreal, Que.

PIPE, cast iron, for water and gas
National Iron Works, Ltd., Toronto.

PIPE COUPLINGS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

PIPE COVERINGS
*Eureka Mineral Wood & Asbestos Co., Toronto.

PIPE ORGANS
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIPES, culvert
Standard Clay Products, Ltd., St. Johns, Que.

*The Pedlar People Limited, Oshawa.

PIPE AND NIPPLES, black and galvanized
*Canadian Tube & Iron Co., Ltd., Montreal, Que.

PIPE, sewer
Hamilton and Toronto Sewer Pipe Co., Limited, Hamilton, Ont.

Standard Clay Products, Ltd., St. Johns, Que.

PIPE, soil and fittings
Anthes Foundry, Ltd., Toronto and Winnipeg.

Warden King Ltd., Montreal, Que.

PIPE AND TUBES, wrought
*Page-Hersey Iron Tube and Lead Co., Ltd., Toronto.

PIPE, threading and cutting off machines
John H. Hall & Sons, Limited, Brantford, Ont.

PISTON RODS
*The Canadian Drawn Steel Co., Limited, Hamilton, Ont.

*Union Drawn Steel Co., Limited, Hamilton, Ont.

PLANERS
*Canada Machinery Corporation, Limited, Galt, Ont.

*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

PLANING MILLS
G. & J. Esplen, Montreal, Que.

PLASTERING TROWELS
*E. C. Atkins & Co., Inc., Hamilton, Ont.

PLOWS
J. Fleury's Sons, Aurora, Ont.

PLUGS
*Crouse-Hinds Co., Ltd., Toronto.

PLUMBERS' SUPPLIES
The Garth Co., Montreal, Que.

The James Morrison Brass Mfg. Co., Ltd., Toronto.

*United Brass & Lead, Ltd., Toronto

PLUMBING APPLIANCES
Standard Sanitary Mfg. Co., Ltd., Limited, Toronto.

PLUMBING SUPPLIES
Toronto Plate Glass Importing Co., Limited, Toronto.

PNEUMATIC DRILLS
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

PNEUMATIC MACHINERY
*Canadian Ingersoll-Rand Co., Sherbrooke, P.Q.

POLE LINE MATERIAL (wooden insulator top pins, side blocks, pole steps, cross arms)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.

POLES, flag
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

POLES, telegraph and telephone, cedar
Ferne Lumber Co., Ltd., Fernie, B.C.

PORK PACKERS AND CHEESE EXPORTERS
The Ingersoll Packing Co., Limited, Ingersoll, Ont.

POSTS, split cedar fence
Ferne Lumber Co., Ltd., Fernie, B.C.

POULTRY SUPPLIES AND MEDICINES
Lee Mfg. Co., Ltd., Pembroke, Ont.

POWDER, blasting
Canadian Explosives, Ltd., Montreal, Que.

POWER PRESSES
Hydraulic Machinery Co., Limited, Montreal.

*William R. Perrin, Ltd., Toronto.

PRESERVATIVE PAINT
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

PRESERVATIVE PAINT FOR BOILERS
*Beveridge Paper Co., Limited, Montreal.

PRESSES, baling and filter
*William R. Perrin, Ltd., Toronto.

PRESSES, hydraulic
Hydraulic Machinery Co., Limited, Montreal.

PRESSES, sheet metal stamping
Brown, Boggs Co., Ltd., Hamilton, Ont.

*Canada Machinery Corporation, Limited, Galt, Ont.

PRESSES, veneer
*Canada Machinery Corporation, Limited, Galt, Ont.

Hydraulic Machinery Co., Limited, Montreal.

*William R. Perrin, Ltd., Toronto.

PRINTERS
Rous & Mann, Ltd., Toronto.

PRINTING AND LITHOGRAPHING
Lawson & Jones, Limited, London, Ont.

PULLEYS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.

*Dodge Mfg. Co., Ltd., Toronto.

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

PULLEYS, wood split.
*Bernard Industrial Co., Fortierville, P.Q.

PULP, bleached sulphite
The Edward Partington Pulp and Paper Co., St. John, N.B.

PULP, sulphate and sulphite
Bathurst Lumber Co., Ltd., Bathurst, N.B.

PULP
*Brown Corporation, La Tuque, Que.

PUMPS
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

*Canadian Allis-Chalmers, Limited, Toronto.

*Bawden Machine Co., Ltd., Toronto.

*Canadian Fairbanks-Morse Company, Limited, Montreal, Que.

*Darling Bros., Ltd., Montreal.

*Ontario Wind Engine & Pump Co., Ltd., Toronto.

*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

Spramotor Co., London, Ont.

PUMPS, boiler feed
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

*Bawden Machine Co., Ltd., Toronto.

*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

PUMPS, centrifugal
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

*M. Beatty & Sons, Ltd., Welland, Ont.

*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

*Watrous Engine Works Co., Ltd., Brantford, Ont.

PUMPS, iron
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

*Goold-Shapley-Muir Co., Limited, Brantford, Ont.

*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

*Watrous Engine Works Co., Ltd., Brantford, Ont.

PUMPS, turbine and reciprocating
*Bawden Machine Co., Ltd., Toronto.

*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

John McDougall, Caledonian Iron Works Co., Ltd., Montreal, Que.

PUNCHES
*John Whitfield Co., Toronto.

*Pratt & Whitney Co., Dundas.

PYROMETERS
*Canadian Hoskins Co., Walkerville, Ont.

RADIATORS
Taylor-Forbes Co., Limited, Guelph, Ont.

Warden King, Ltd., Montreal, Que.

RAILINGS, brass and iron
*Dennis Wire & Iron Works Co., London, Ont.

*United Brass & Lead, Ltd., Toronto

RAILS, light
Hamman Steel Car and Engineering Works, Hamilton.

RAILWAY SIGNAL APPLIANCES
General Railway Signal Co. of Canada, Ltd., Montreal, Que.

RAILWAY SUPPLIES
*Canadian Steel Foundries, Ltd., Montreal, Que.

*Chicago Bridge & Iron Works, Bridgeburg, Ont.

B. J. Coghlin Co., Ltd., Montreal, Que.

RAILWAY TARIFF BINDERS
The Esdale Press Ltd., Edmonton.

READY-TO-WEAR GARMENTS, LADIES'
H. C. Boulter Co., Ltd., Toronto.

REAMERS
*Pratt & Whitney Co., Dundas.

*Butterfield & Co., Rock Island, P.Q.

RECEPTACLES
*Crouse-Hinds Co., Ltd., Toronto.

"REDWOOD" lager
E. L. Drewry, Winnipeg, Man.

REED AND RATTAN GOODS
Canada Furniture Mfgs., Limited, Woodstock, Ont.

REFRIGERATORS
Sanderson-Harold Co., Ltd., Paris, Ont.

Lee Mfg. Co., Ltd., Pembroke, Ont.

REFRIGERATING MACHINERY
The Linde Canadian Refrigeration Co., Ltd., Montreal, Que.

REFRIGERATORS, store, homes and institutions
Ham & Nott Co., Ltd., Brantford, Ont.

John Hillock & Co., Ltd., Toronto.

REINFORCEMENT BARS
*Burlington Steel Co., Ltd., Hamilton, Ont.

*The Steel Co. of Canada, Limited, Hamilton, Ont.

*Trussed Concrete Steel Co., Ltd., Walkerville.

REINFORCEMENT FOR CONCRETE
*Canada Wire & Iron Goods Co., Hamilton, Ont.

*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

REINFORCEMENT FOR CONCRETE ROOFING, Metal.
*The Pedlar People Limited, Oshawa.

*Trussed Concrete Steel Co., Ltd., Walkerville.

REVOLVING DOORS
*A. B. Ormsby Co., Ltd., Toronto.

RINGS, gold
Caron Bros., Montreal, Que.

RIVETERS, pneumatic
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

RIVETS
*Canadian Tube & Iron Co., Ltd., Montreal, Que.

*The Steel Co. of Canada, Limited, Hamilton, Ont.

RIVETS, bifurcated and tubular
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

RIVETS AND BURS, iron, copper and brass
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ROCK DRILLS
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

ROLL PRINTING
*Autographic Register Co., Ltd., Montreal.

Business Systems, Ltd., Toronto.

ROOFING, ready to lay
Standard Paint Co. of Canada, Ltd., Montreal, Que.

*The Barrett Co., Ltd., Toronto and Montreal.

ROOFINGS, plastic and liquid
*Beveridge Paper Co., Limited, Montreal.

ROOF TRUSSES
*The Canadian Bridge Co., Ltd., Walkerville, Ont.

*Dominion Bridge Co., Ltd., Montreal, Que.

ROPE
*Doon Twines Ltd., Doon, Ont.

*Shurly & Derrett, Ltd., Toronto.

ROPE, cotton
Hamilton Cotton Co., Hamilton, Ont.

RUBBER FOOTWEAR
Ames Holden, McCready, Limited, Montreal, Que.

*Gutta Percha & Rubber, Ltd. The Miner Rubber Co., Limited, Granby, Que.

RUBBER GOODS
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.

*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.

*Gutta Percha & Rubber, Ltd.

RUBBER MOULDS
Bawden Machine Co., Ltd., Toronto.

RUBBER PACKING
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.

*Garlock Packing Company, Hamilton, Ont.

RULES
The Luffkin Rule Co. of Canada, Ltd., Windsor, Ont.

RYE
The St. Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.

SADDLERY HARDWARE
*Dominion Forge and Stamping Co., Walkerville, Ont.

SAFES
*Goldie & McCulloch Co., Limited, Galt, Ont.

J. & J. Taylor, Ltd., Toronto.

SAMPLE CASES
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.

J. Eveleigh & Co., Ltd., Montreal, Que.

SAND RAMMERS
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

SANDPAPER
*Delany and Pettit, Ltd., Toronto.

SASH CORD, cotton
Hamilton Cotton Co., Hamilton, Ont.

SALT
Canadian Salt Co., Ltd., Windsor, Ont.

SANITARY PAPER TOWELS
*E. B. Eddy Co., Ltd., Hull, Que.

SAW SHARPENING MACHINERY
*Canadian Hart Wheels, Limited, Hamilton, Ont.

SAWS
*E. C. Atkins & Co., Ltd., Hamilton.

Henry Disston & Sons, Limited, Toronto.

Shurly & Deitrich, Galt, Ont.

SAWS, cross-cut and band
*Canada Machinery Corporation, Limited, Galt, Ont.

*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

Shurly & Deitrich, Galt, Ont.

SAWS, circular mill
Shurly & Deitrich, Galt, Ont.

SAWS, hack
*Victor Saw Works, Ltd., Hamilton, Ont.

SAWS, of all kinds
Simonds Canada Saw Co., Limited, Montreal, Que.

SAWS, rip
*Canada Machinery Corporation, Limited, Galt, Ont.

*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

Shurly & Deitrich, Galt, Ont.

SAWMILLS
G. & J. Esplen, Montreal, Que.

*The Watrous Engine Works Co., Ltd., Brantford, Ont.

SAW MILL MACHINERY
*Canadian Allis-Chalmers, Limited, Toronto.

SAWS, specialties
*Victor Saw Works, Ltd., Hamilton, Ont.

SCALES
The Gurney Scale Co., Hamilton, Ont.

SCALES, counter
The Gurney Scale Co., Hamilton, Ont.

SCALES, railway track, etc.
The Gurney Scale Co., Hamilton, Ont.

SCREENS
*Canada Wire & Iron Goods Co., Hamilton, Ont.

SCREEN DOORS AND WINDOWS
Sanderson-Harold Co., Ltd., Paris, Ont.

Ham & Nott Co., Ltd., Brantford, Ont.

SCREWS
*John Morrow Screw & Nut Co., Ltd., Ingersoll, Ont.

*The National Acme Mfg. Co., Montreal, Que.

*The Steel Co. of Canada, Limited, Hamilton, Ont.

*United Brass & Lead, Ltd., Toronto

SCREW PLATES
*Butterfield & Co., Rock Island, P.Q.

SECURITIES, engraved
American Bank Note Co., Ottawa, Ont.

SERGES

Rosamond Woollen Co., Almonte,
SHAFTING

Canada Forge Co., Ltd., Welland,
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.

*Canadian Drawn Steel Co., Ltd., Hamilton, Ont.

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

*Union Drawn Steel Co., Limited, Hamilton, Ont.

*Dodge Mfg. Co., Ltd., Toronto.

SHANTY BLANKETS

Slingsby Mfg. Co., Ltd., Brantford,

SHAPERS

*Canada Machinery Corporation, Limited, Galt, Ont.

*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

SHARP BLADES, iron

*Galt Knife Co., Ltd.,
The Peter Hay Knife Co., Limited, Galt, Ont.

SHEATHING

*The Barrett Co., Ltd., Toronto and Montreal.

SHEATHING, asbestos corrugated

*Eureka Mineral Wool & Asbestos Co., Toronto.

SHEET METAL STAMPINGS

Acme Stamping & Tool Works, Ltd., Hamilton, Ont.

*The Pedlar People Limited, Oshawa.

*W. H. Banfield & Sons, Ltd., Toronto.

SHEETS, ETC.

*Tallman Brass & Metal Co., Hamilton, Ont.

SHEETS, galvanized

*Dominion Sheet Metal Co., Ltd., Hamilton.

*The Pedlar People Limited, Oshawa.

SHINGLES

Bathurst Lumber Co., Ltd., Bathurst, N.B.

SHINGLE SAWS

*E. C. Atkins & Co., Inc., Hamilton, Ont.

SHIRTS

MacKenzie & Co., Ottawa, Ont.

John W. Peck & Co., Ltd., Montreal, Que.

SHIRTS, workmen's

*A. R. Clarke & Co., Ltd., Toronto.

SHOE PEGWOOD

O. Chalifour, Quebec, Que.

SHOE LININGS

Galt Knitting Co., Ltd., Galt, Ont.

SHOES, running and athletic

Ames-Holden-McCreedy, Ltd., Montreal, Que.

SHOOKS

Barchard & Co., Ltd., Montreal.

SILENT CHAIN DRIVES

*Canadian Link-Belt Co., Toronto.

SILVER BULLION

Coniagas Reduction Co., Ltd., St. Catharines, Ont.

SILVERSMITH

Canadian Wm. A. Rogers, Ltd., Toronto.

Standard Silver Co., Toronto.

SILVERWARE, sterling

Roden Bros., Limited, Toronto.

SINKS, enamelled

Amherst Foundry Co., Limited, Amherst, N.S.

SKATES, figure

Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, genuine Acme

Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, hockey

Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, ice

Canada Cycle and Motor Co., Ltd., Toronto.

SKATE SHARPENERS

*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.

SKIFFS

Peterboro Canoe Co., Ltd., Peterboro, Ont.

SKYLIGHTS

*A. B. Ormsby Co., Ltd., Toronto.

*The Pedlar People Limited, Oshawa.

SLEIGHS

Tudhope-Anderson Co., Limited, Orillia, Ont.

SLIPPERS

Ames-Holden-McCreedy, Ltd., Montreal, Que.

SLOTTERS

*Canada Machinery Corporation, Limited, Galt, Ont.

SMEALTER LINING

*Beveridge Paper Co., Ltd., Montreal.

SMOKE CONSUMERS

*The Jones Underfeed Stoker Co., Ltd., Toronto.

SMOKE-STACKS

*Steel Trough and Machine Co., Ltd., Tweed, Ont.

SOAPS

J. Barsalou & Co., Ltd., Montreal, Que.

SOAP (soft, oil)

The Imperial Varnish & Color Co., Ltd., Toronto.

Sherwin-Williams Co. of Canada, Limited, Montreal, Que.

SOCKETS

*Crouse-Hinds Co., Ltd., Toronto.

SODA WATER FOUNTAINS

J. J. McLaughlin, Ltd., Toronto.

SOIL PIPE

Anthes Foundry, Ltd., Toronto.

SOLDER

Alonso W. Spooner, Ltd., Port Hope, Ont.

*Canada Metal Co., Toronto.

*Tallman Brass & Metal Co., Hamilton, Ont.

SOLDER, silver

Geo. H. Lees & Co., Hamilton.

SOLDER, wire and bar

*American Can Co., Montreal, and Hamilton.

SOLDERING IRONS AND COPPERS

Brown, Boggs Co., Ltd., Hamilton, Ont.

SNOWSHOES

Helt, Renfrew, Ltd., Quebec, Que.

SPARK PLUGS

Canadian Carbon Co., Limited, Toronto.

SPECIAL MACHINERY

Globe Engineering Co., Ltd., Hamilton.

SPIKES, railway and marine

Starr Mfg. Co., Ltd., Dartmouth, N.S.

SPIRAL CONVEYORS

*Canadian Mathews Gravity Carrier Co., Ltd., Toronto.

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

SPLIT PEAS

H. Murton, Ltd., Guelph, Ont.

SPIRITS

*Hiram Walker & Sons, Limited, Walkerville, Ont.

SPORTING MEDALS AND TROPHIES

Roden Bros., Limited, Toronto.

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Spramotor Co., London, Ont.

SPRING COTTERS

*Richards-Wilcox Canadian Co., Limited, London, Ont.

SPRINGS

*Canadian Steel Foundries, Ltd., Montreal, Que.

B. J. Coghlin Co., Ltd., Montreal, Que.

Guelph Spring & Axle Co., Ltd., Guelph, Ont.

SPRINGS, carriage and automobile

Guelph Spring & Axle Co., Ltd., Guelph, Ont.

SPRINKLER SYSTEMS

*Chicago Bridge & Iron Works, Bridgeburg, Ont.

*The Bennett & Wright Co., Ltd., Toronto, Ont.

*Purdy, Manvell, Ltd., Toronto.

*Vogel Co. of Canada, Ltd., Montreal, Que.

SPROCKET WHEELS

*Canadian Link Belt Co., Ltd., Toronto.

STAINS

R. C. Jamieson & Co., Ltd., Montreal, Que.

STAINS, creosote shingle

A. Muirhead Co., Ltd., Toronto.

STAMPINGS

*Dominion Forge and Stamping Co., Ltd., Walkerville, Ont.

STAMPS, steel, brass and rubber

Pritchard-Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

STAMP MILLS

*Jencks Machine Co., Sherbrooke.

STATIONERY, office

Harris Lithographing Co., Toronto.

STEAM PIPE and BOILER COVERINGS, asbestos

*Eureka Mineral Wool & Asbestos Co., Toronto.

STEAM SHOVELS

*M. Beatty & Sons, Ltd., Welland, Ont.

STEAM SPECIALTIES

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*Darling Bros., Ltd., Montreal.

*Sheldons, Ltd., Galt.

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*C. A. Dunham Co., Ltd., Toronto.

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STEEL

*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.

*Burlington Steel Co., Ltd., Hamilton, Ont.

STEEL BILLETS AND BLOOMS

*The Steel Company of Canada, Limited, Hamilton.

STEEL BUILDINGS

*The Canadian Bridge Co., Ltd., Walkerville, Ont.

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*The Pedlar People Limited, Oshawa.

*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

STEEL CABINETS

J. & J. Taylor, Ltd., Toronto.

STEEL CASTINGS

*Canadian Steel Foundries, Ltd., Montreal, Que.

*Dominion Steel Foundry Co., Ltd., Hamilton.

STEEL FILING EQUIPMENT

*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

STEEL PLATE WORK

*Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.

*Toronto Iron Works, Ltd., Toronto, Ont.

STEEL RODS

*The Steel Co. of Canada, Ltd., Hamilton.

STEEL SASH

*Dennis Wire & Iron Works Co., London.

*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

STEEL SHELVING

*Dennis Wire & Iron Works Co., London.

STEEL WIRE RODS

*The Steel Company of Canada, Limited, Hamilton.

STELLITE

*Deloro Smelting & Refining Co., Ltd., Deloro and Toronto.

STENCILS, brass

Pritchard-Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

STEREOTYPING

Central Press Agency, Toronto

STOKERS

*The Jones Underfeed Stoker Co., Ltd., Toronto.

STOOLS AND BENCHES, piano and organ

*Otterville Mfg. Co., Ltd., Otterville, Ont.

STOOLS, steel factory

*Steel Trough and Machine Co., Ltd., Tweed, Ont.

STONE

The Hagersville Contracting Co., Hagersville, Ont.

STORAGE BATTERIES

*Canadian General Electric Company, Ltd., Toronto.

STORE FITTINGS

The Canadian Office & School Furniture Co., Ltd., Preston, Ont.

STOVES

Smith Foundry Co., Ltd., Fredericton, N.B.

Tudhope-Anderson Co., Limited, Orillia, Ont.

Bedford Stove Co., Bedford, Que.

STOVE LININGS

Standard Clay Products, Ltd., St. Johns, Que.

STOVES AND RANGES

Bedford Stove Co., Bedford, Que.

Lee Mfg. Co., Ltd., Pembroke, Ont.

The Jas. Smart Mfg. Co., Ltd., Brockville, Ont.

McClary Mfg. Co., London, Ont.

STREET LIGHTING FIXTURES

*Crouse-Hinds Co., Ltd., Toronto.

STRETCHERS, lace curtain

*Otterville Mfg. Co., Ltd., Otterville, Ont.

STRUCTURAL STEEL

*Canadian Allis-Chalmers, Limited, Toronto.

*Dominion Bridge Co., Montreal.

*Hamilton Bridge Works Co., Ltd., Hamilton.

*Manitoba Bridge & Iron Works, Ltd., Winnipeg.

*McGregor & McIntyre, Ltd., Toronto.

*McKinnon Holmes & Co., Sherbrooke, P.Q.

*The Canadian Bridge Co., Ltd., Walkerville, Ont.

SUIT CASES

J. Eveleigh & Co., Ltd., Montreal.

The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.

SUPPLY DEALERS

*The Foundation Co., Limited, Montreal.

SURFACERS

*Canada Machinery Corporation, Limited, Galt, Ont.

*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

SWITCHBOARDS

*Canadian General Electric Company, Ltd., Toronto.

*Crouse-Hinds Co., Ltd., Toronto.

SWITCHES

*Crouse-Hinds Co., Ltd., Toronto.

SWITCHES, railway

Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.

SWITCHES AND FROGS

*Canadian Steel Foundries, Ltd., Montreal, Que.

SWITCH STANDS

Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.

TABLE COVERS, chenille

Hamilton Cotton Co., Hamilton, Tanks

*Toronto Iron Works, Ltd., Toronto.

*Chicago Bridge & Iron Works, Bridgeburg, Ont.

Goold-Shapley-Muir Co., Ltd., Brantford, Ont.

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*Ontario Wind Engine & Pump Co., Ltd., Toronto.

*The Goldie & McCulloch Co., Ltd., Galt.

*The Watrous Engine Works Co., Ltd., Brantford.

TANKS, steel storage

*Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.

*Steel Trough and Machine Co., Ltd., Tweed, Ont.

TANNERS' SUPPLIES

- TOOLS, track**
B. J. Coghlin Co., Ltd., Hamilton, Ont.
- TOOLS, sheet metal workers'**
Brown, Boggs Co., Ltd., Hamilton.
- TRACK, steel, portable**
Hamman Steel Car and Engineering Works, Hamilton.
- TRACTORS, kerosene and gasoline**
*Gilson Manufacturing Co., Ltd., Guelph.
- TRADE MARKS AND DESIGNS**
Ridout & Maybee, Toronto.
- TRANSFORMERS**
*Canadian General Electric Company, Ltd., Toronto.
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines.
- TRANSLATIONS INTO FRENCH**
Raoul Renault, Quebec City.
- TRANSMISSION MACHINERY**
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Canadian Link Belt Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*The Watrous Engine Works Co., Ltd., Brantford.
- TRAPS**
*C. A. Dunham Co., Ltd., Toronto.
*Canadian Morehead Mfg. Co., Woodstock.
- TROLLEYS**
*Richard-Wilcox Canadian Co., Limited, London, Ont.
*Northern Crane Works, Limited, Walkerville.
- TRUCKS**
The Gurney Scale Co., Hamilton.
*Northern Crane Works, Limited, Walkerville.
- TRUCKS, brick, tile and lumber**
*Watrous Engine Works Co., Ltd., Brantford.
- TRUCKS, fibre and reinforced**
*Beveridge Paper Co., Limited, Montreal.
- TRUCKS, motor**
*National Steel Car Co., Limited, Hamilton.
- TRUCKS, warehouse and factory**
The W. S. Mahaffy Co., Toronto.
- TRUCKS, steel, forge and foundry**
Hamman Steel Car and Engineering Works, Hamilton.
- TRUCKS FOR OFFICE AND VAULT USE**
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
- TRUNKS**
Lamontagne Ltd., Montreal, Que.
J. Eveleigh & Co., Ltd., Montreal.
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.
- TUBING, brass and copper**
*Booth-Coulter Copper & Brass Co., Ltd., Toronto.
Canadian Seamless Wire Co., Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.
- TUBING, fibre**
*Beveridge Paper Co., Limited, Montreal.
- TUBING, gold and silver**
Canadian Seamless Wire Co., Toronto.
- TUMBLERS, foundry**
*Northern Crane Works, Limited, Walkerville.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
- TURBINES, steam**
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines.
- TURPENTINE**
*Brown Corporation, La Tuque, Que.
- TWEEDS**
Rosamond Woollen Co., Almonte, Ont.
- TWINES**
*Doon Twines Ltd., Doon, Ont.
*Shurly & Derrett, Ltd., Toronto.
- TWINES, binder**
Brantford Cordage Co., Ltd., Brantford, Ont.
- TWINES, cotton**
Hamilton Cotton Co., Hamilton, Ont.
- TWIST DRILLS**
*John Morrow Screw and Nut Co., Ltd., Ingersoll.
*Pratt and Whitney Co., of Canada, Dundas, Ont.
*The Wilt Twist Drill Co., Ltd., Walkerville, Ont.
- UNDERWEAR**
Galt Knitting Co., Ltd., Galt, Ont.
- UNDERWEAR, imperial**
Kingston Hosiery Co., Ltd., Kingston, Ont.
- UNIONS**
*Dart Union Co., Ltd., Toronto, Ont.
*Otterville Mfg. Co., Ltd., Otterville, Ont.
- UPHOLSTERED FURNITURE, leather and tapestries**
Imperial Rattan Co., Ltd.
- VALVES**
*Jenkins Bros., Ltd., Montreal.
*Kerr Engine Co., Ltd., Walkerville.
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*Penberthy Injector Co., Ltd., Windsor.
- VALVES, for steam and water**
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*Mueller Mfg. Co., Ltd., Sarnia.
*Penberthy Injector Co., Ltd., Windsor.
- VALVES, pressure reducing**
*Mueller Mfg. Co., Ltd., Sarnia.
- VALVES, regrounding globe, angle, cross checks, swing checks**
*Mueller Mfg. Co., Ltd., Sarnia.
Penberthy Injector Co., Ltd., Windsor, Ont.
- VALVES, regulating**
*Mueller Mfg. Co., Ltd., Sarnia.
- VALVES, rubber**
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
- VARNISHES**
*Ault & Wiborg Co. of Canada, Ltd., Toronto.
Berry Bros., Walkerville, Ont.
R. C. Jamieson & Co., Ltd., Montreal, Que.
- VAULT FITTINGS, steel**
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
- VAULTS AND VAULT DOORS**
*The Goldie & McCulloch Co., Ltd., Galt.
J. & J. Taylor, Ltd., Toronto.
- VENTILATING APPLIANCES**
*Sheldons, Ltd., Galt.
- VENTILATING SYSTEMS**
Gurney Foundry Co., Ltd., Toronto.
- VENTILATORS**
*A. B. Ormsby, Ltd., Toronto.
*The Pedlar People Limited, Oshawa.
- VOLTMETERS AND AMMETERS**
*Crouse-Hinds Co., Ltd., Toronto.
- WAGONS**
Tudhope-Anderson Co., Ltd., Orillia.
- WALL COPING**
Standard Clay Products, Ltd., St. Johns, Que.
- WASHERS**
*The Steel Company of Canada Limited, Hamilton.
*United Brass & Lead, Ltd., Toronto.
- WASHERS, fibre**
*Beveridge Paper Co., Limited, Montreal.
- WASHERS, plate or wrought**
London Rolling Mill Co., Ltd., London, Ont.
- WASTE PAPER BASKETS AND ALL RECEPTACLES, fibre**
*Beveridge Paper Co., Limited, Montreal.
- WASTES, wool and cotton**
Factory Waste and Metal Co., Montreal, Que.
*Scythes & Co., Ltd., Toronto.
- WATERPROOF, cement coating**
Benjamin Moore & Co., Ltd., Toronto.
- *Beveridge Paper Co., Limited, Montreal.**
- *The Barrett Co., Ltd., Toronto and Montreal.**
- *Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.**
- WATER WHEELS**
*Canadian Allis-Chalmers, Limited, Toronto.
- WEBBING, elastic**
Hamilton Cotton Co., Hamilton, Ont.
- WEBBING, non-elastic**
Hamilton Cotton Co., Hamilton, Ont.
- WELDING APPARATUS AND MATERIALS**
*The Prest-O-Lite Company.
- WELL-DIGGING TOOLS AND MACHINERY**
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
- WHEELS**
*Canadian Car & Foundry Co., Ltd., Montreal, Que.
- Wheels, corundum**
*Canadian Hart Wheels, Ltd., Hamilton, Ont.
- WHEELS, emery**
*Canadian Hart Wheels, Ltd., Hamilton, Ont.
- WHEELS, fibre**
*Beveridge Paper Co., Limited, Montreal.
- WHEELS, water (impulse type)**
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.
- WELL DRILLING TOOLS AND MACHINERY**
Oil Well Supply Co., Ltd., Petrolia, Ont.
- WHIPS AND LASHES**
Lay Whip Co., Rock Island, Que.
- WHISKY**
*Hiram Walker & Sons, Ltd., Walkerville, Ont.
- WHITE ARSENIC**
Coniagas Reduction Co., Ltd., St. Catharines, Ont.
- WHITE LEAD**
Brandram-Henderson, Ltd., Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.
- WINDMILLS**
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
- WINDOW SHADES**
Daly & Morin, Montreal, Que.
- WIRE**
*The Steel Company of Canada Limited, Hamilton.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
- The Graham Nail Works, Toronto.
- WIRE CLOTH**
*Canada Wire & Iron Goods Co., Hamilton.
C. H. Johnston & Sons, Ltd., Montreal, Que.
- WIRE, feeder and trolley**
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.
- WIRE GUARDS**
*Canada Wire & Iron Goods Co., Hamilton.
C. H. Johnston & Sons, Ltd., Montreal, Que.
- WIRE, insulated electric**
*Northern Electric Co., Limited, Montreal.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.
- WIRE, weatherproof**
*Northern Electric Co., Limited, Montreal.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.
- WIRE ROPE**
*Dominion Wire Rope Co., Ltd., Montreal.
*The B. Greening Wire Co., Ltd., Hamilton.
- WIRE WORK**
C. H. Johnson & Sons, Ltd., Montreal, Que.
*Canada Wire & Iron Goods Co., Hamilton.
*The Geo. B. Meadows, Toronto, Iron and Brass Goods Works Co., Ltd., Toronto.
- WIRING DEVICES**
*Crouse-Hinds Co., Ltd., Toronto.
- WOOD**
Standard Fuel Co., Toronto.
- WOOD BORERS**
*Canada Machinery Corporation, Limited, Galt, Ont.
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
- WOOD PRINTERS**
Barchard & Co., Ltd., Toronto.
- WOOD PULP, mechanical**
La Cie de Pulpe de Chicoutimi, Chicoutimi, Que.
- WOOD SHOP, general work**
*Canadian Rumely Co., Limited, Toronto, Ont.
- WOOD SPLIT PULLEYS**
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
- WOOL**
*H. V. Andrews, Toronto.
- WORSTED COATINGS AND SUITINGS**
Rosamond Woollen Co., Almonte, Ont.
- WRAPPERS, book, bottle, etc.**
*The Thompson & Norris Co., of Canada, Ltd., Niagara Falls, Ont.
- WRAPPERS, waterproof paper and twine reinforced**
*Beveridge Paper Co., Limited, Montreal.
- WROUGHT IRON PIPE**
*The Steel Company of Canada, Ltd., Hamilton.
- WROUGHT PIPE**
*The Steel Company of Canada, Ltd., Hamilton.
- YARNS, cotton**
Hamilton Cotton Co., Hamilton, Ont.
- ZINC, electrical**
*The Canada Metal Co., Toronto.

* For Display Advertisement see Index, Pages 1-2

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THE BOOTH-COULTER COPPER & BRASS COMPANY, LTD.

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VOL. XIX., NO. 3

JULY, 1918

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Industrial Canada

MONTREAL * CONVENTION * NUMBER * 1918

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HEAD OFFICE, TORONTO, ONT

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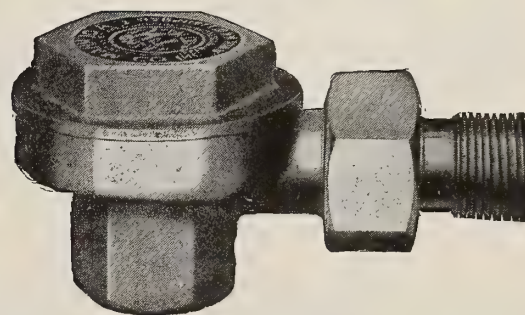
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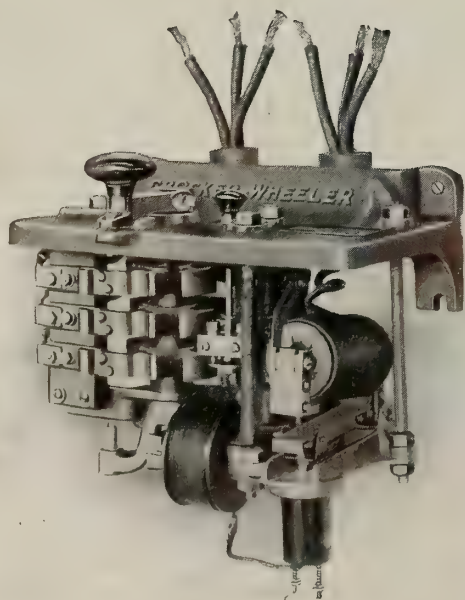
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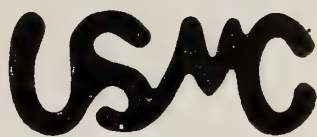
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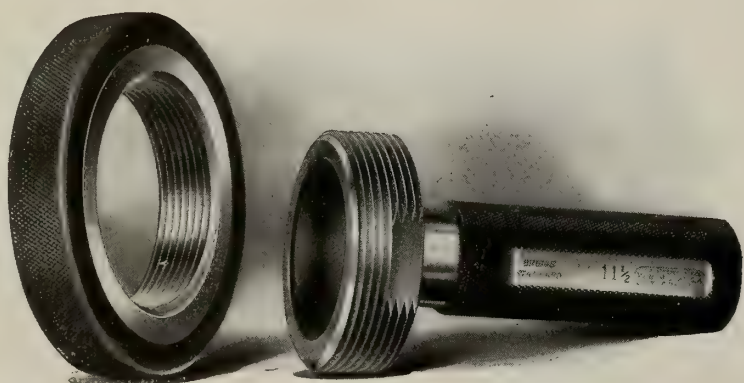
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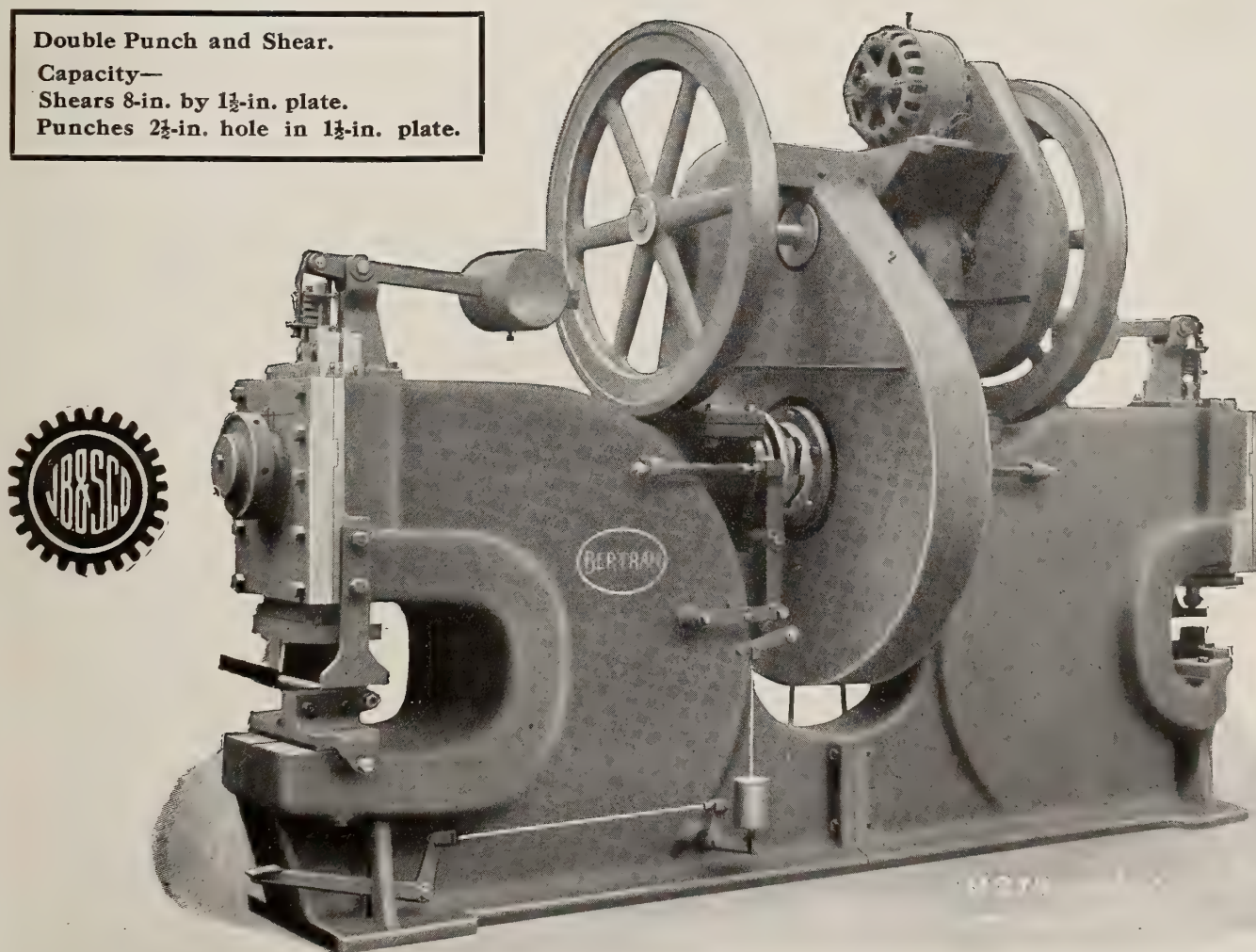
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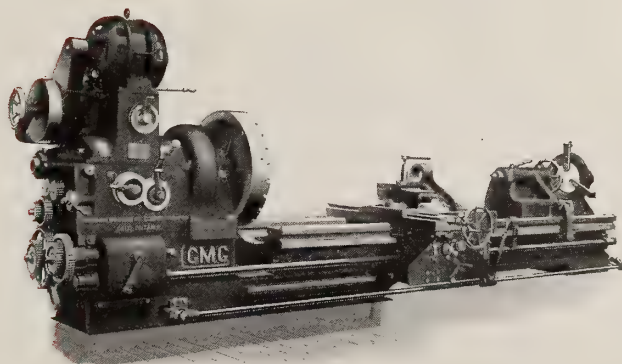
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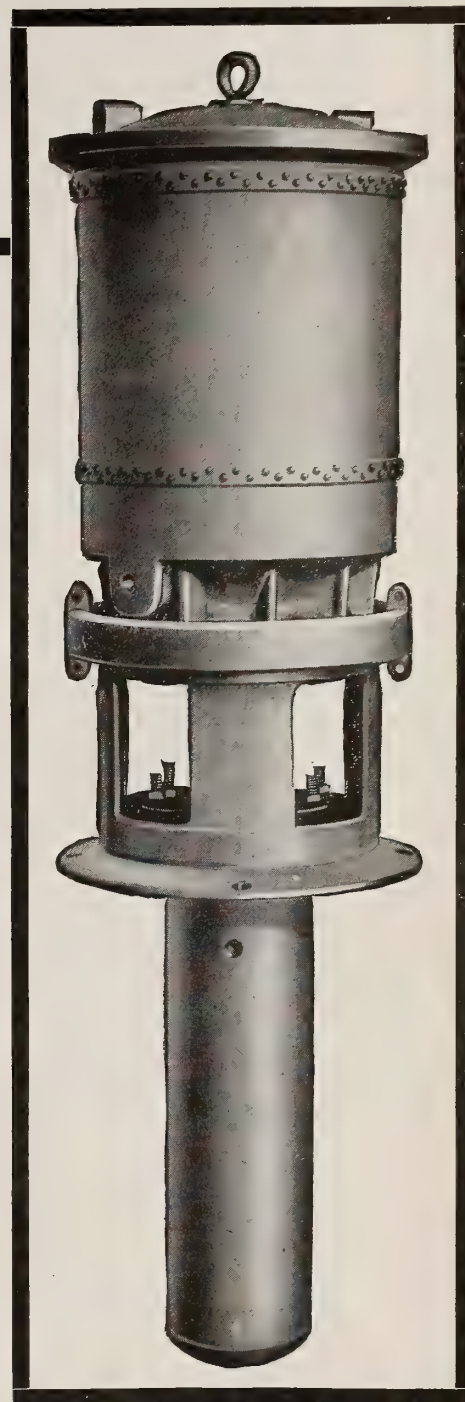
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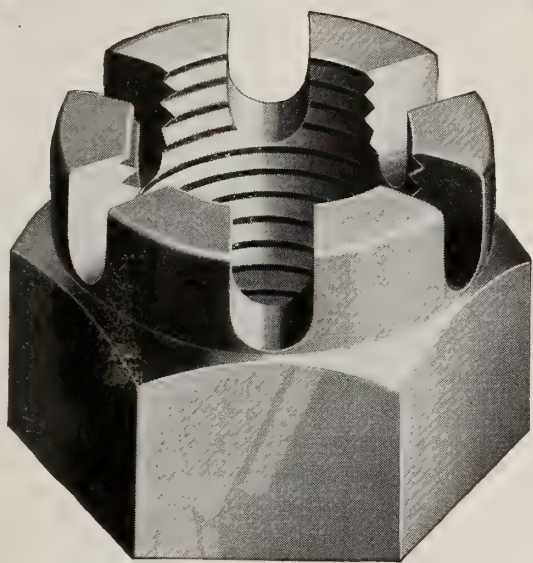
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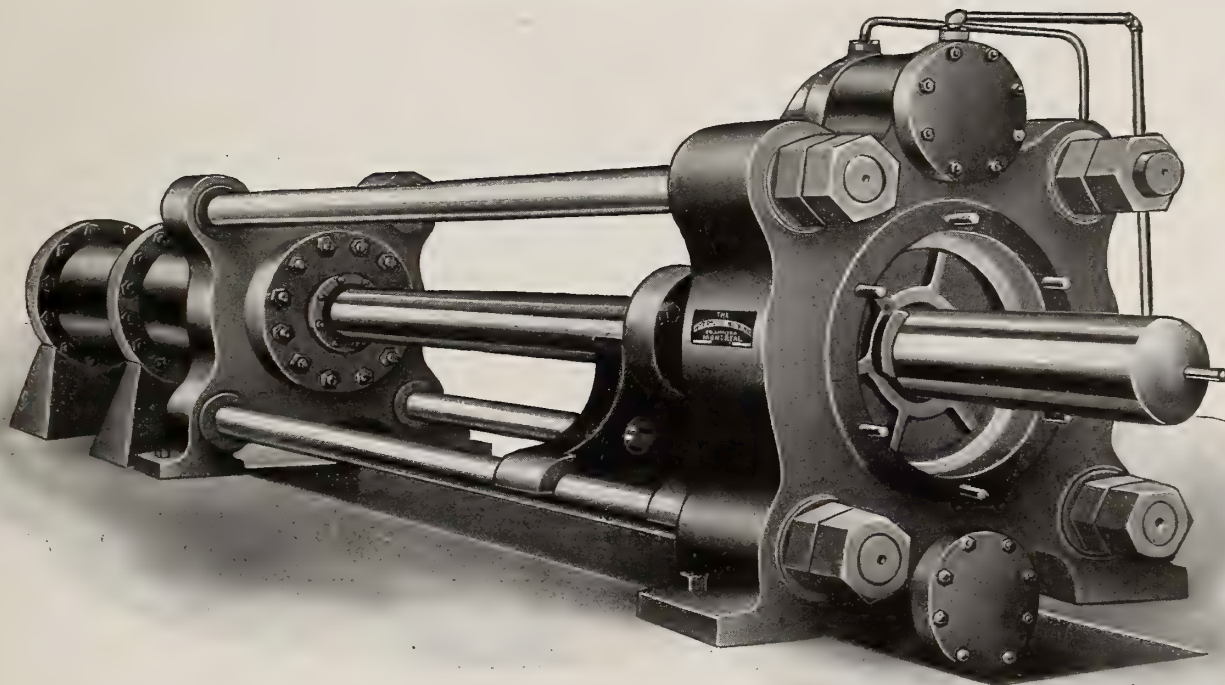
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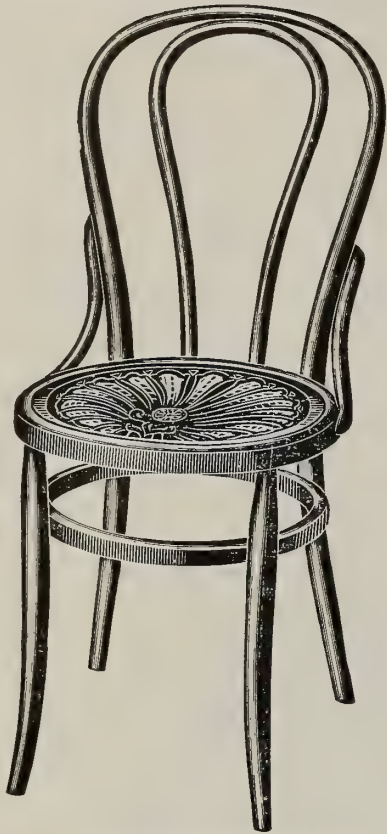
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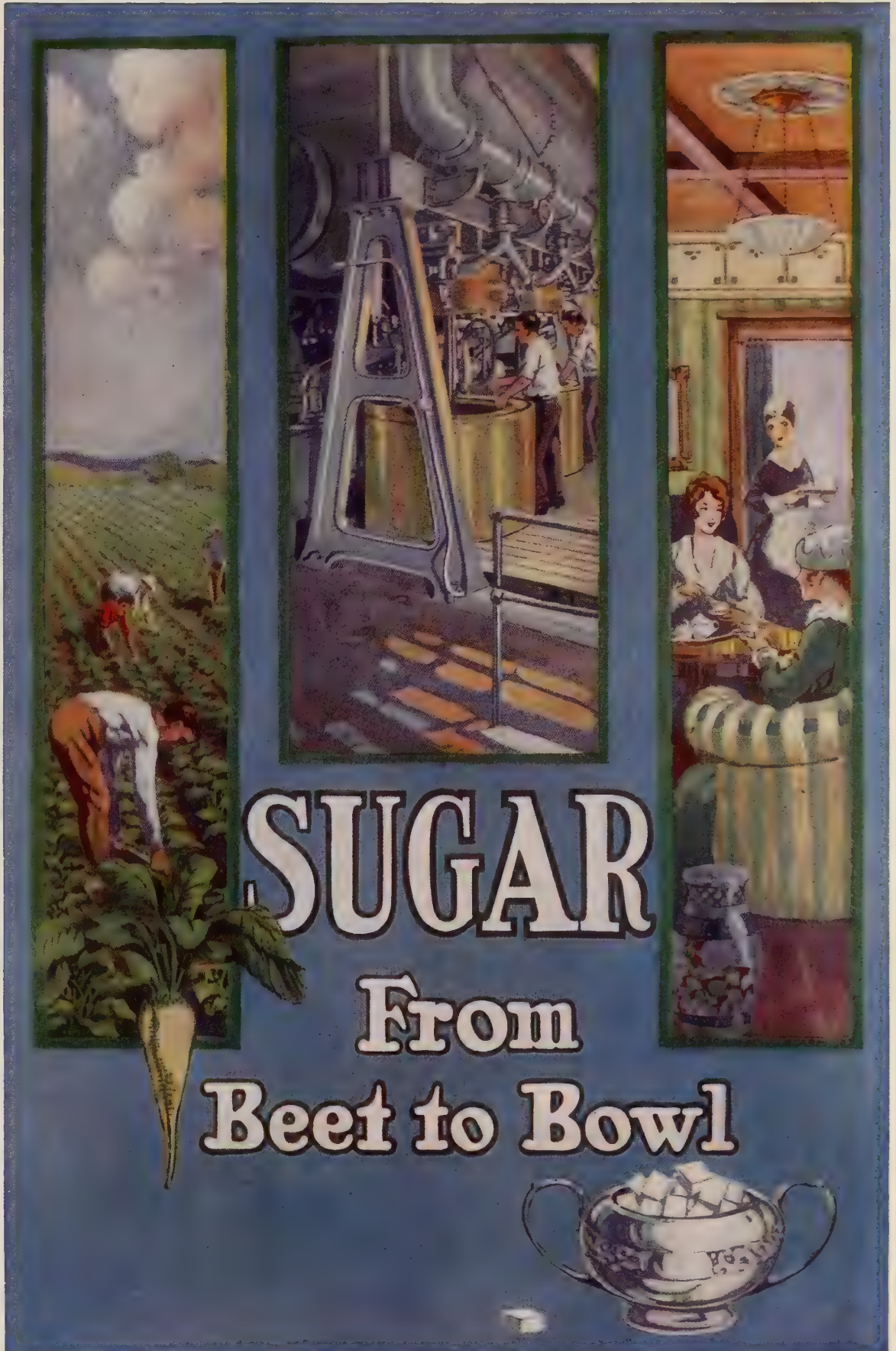
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The illustration is a vertical triptych. The left panel shows a person harvesting beets in a field under a cloudy sky. The middle panel shows a large industrial sugar refinery with workers. The right panel shows a woman in a maid's uniform serving a bowl of sugar cubes to a seated woman. Below the triptych, the text 'SUGAR From Beet to Bowl' is written in a stylized font. At the bottom right of the illustration is a silver bowl filled with sugar cubes.

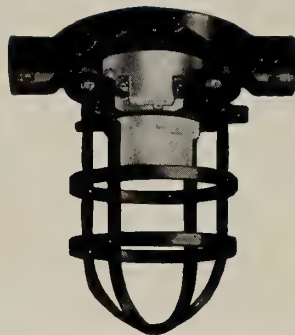
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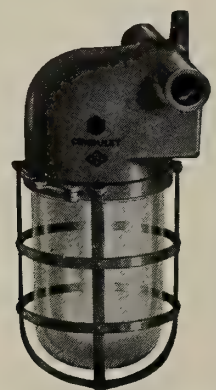
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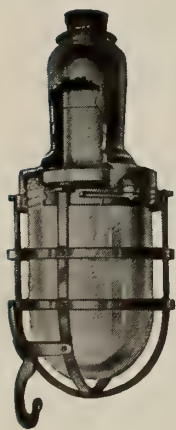
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VIEW OF THE WARFOX, WIRED THROUGHOUT IN CONDULETS



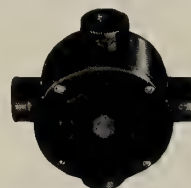
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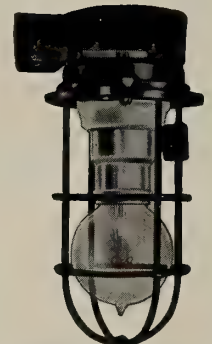
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for operating Flush
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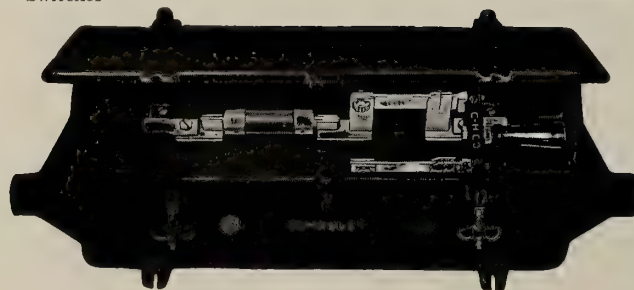
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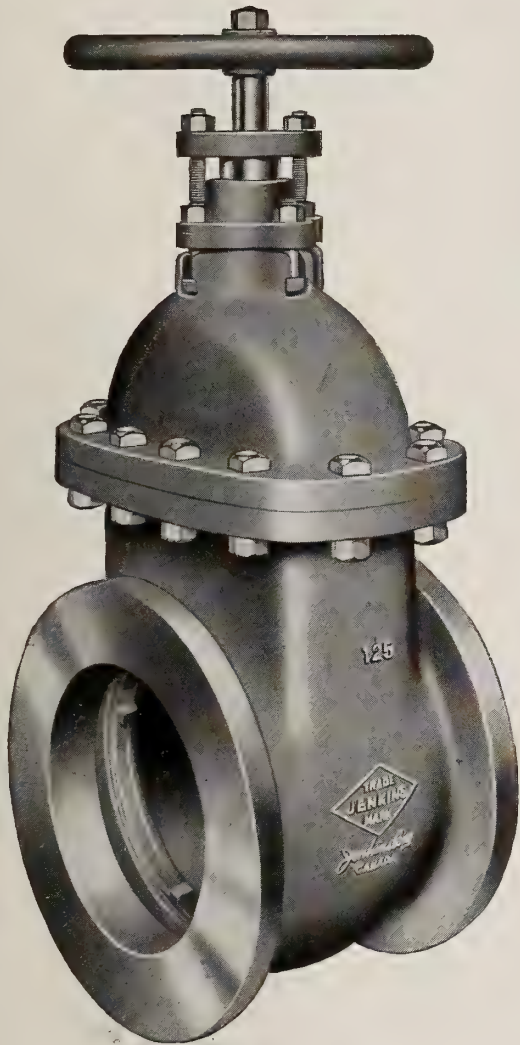


FIG. 402, TYPE "K," IRON BODY
INSIDE SCREW, GATE
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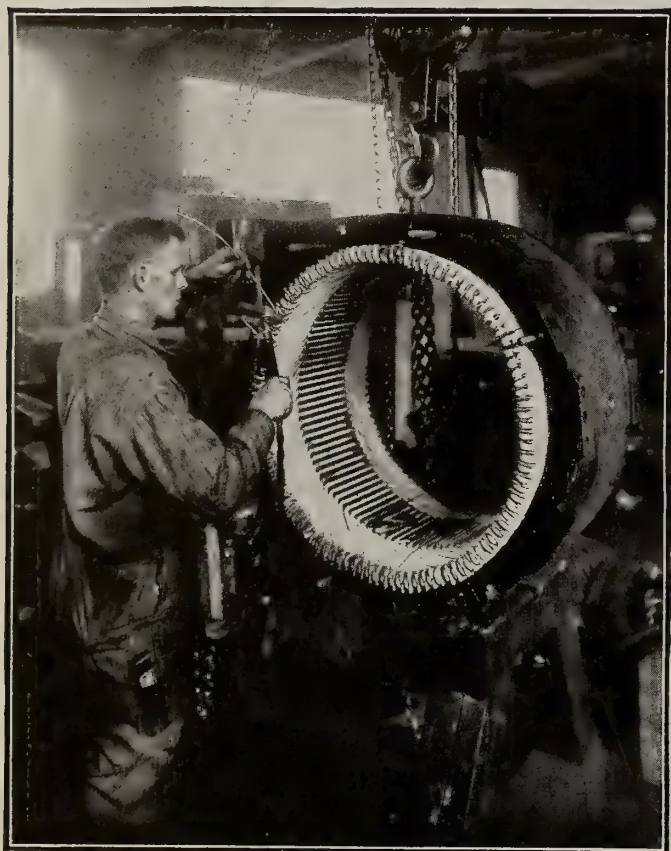
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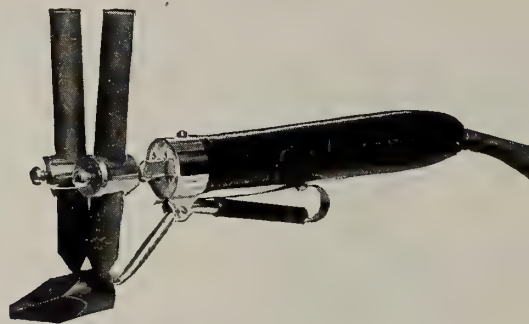
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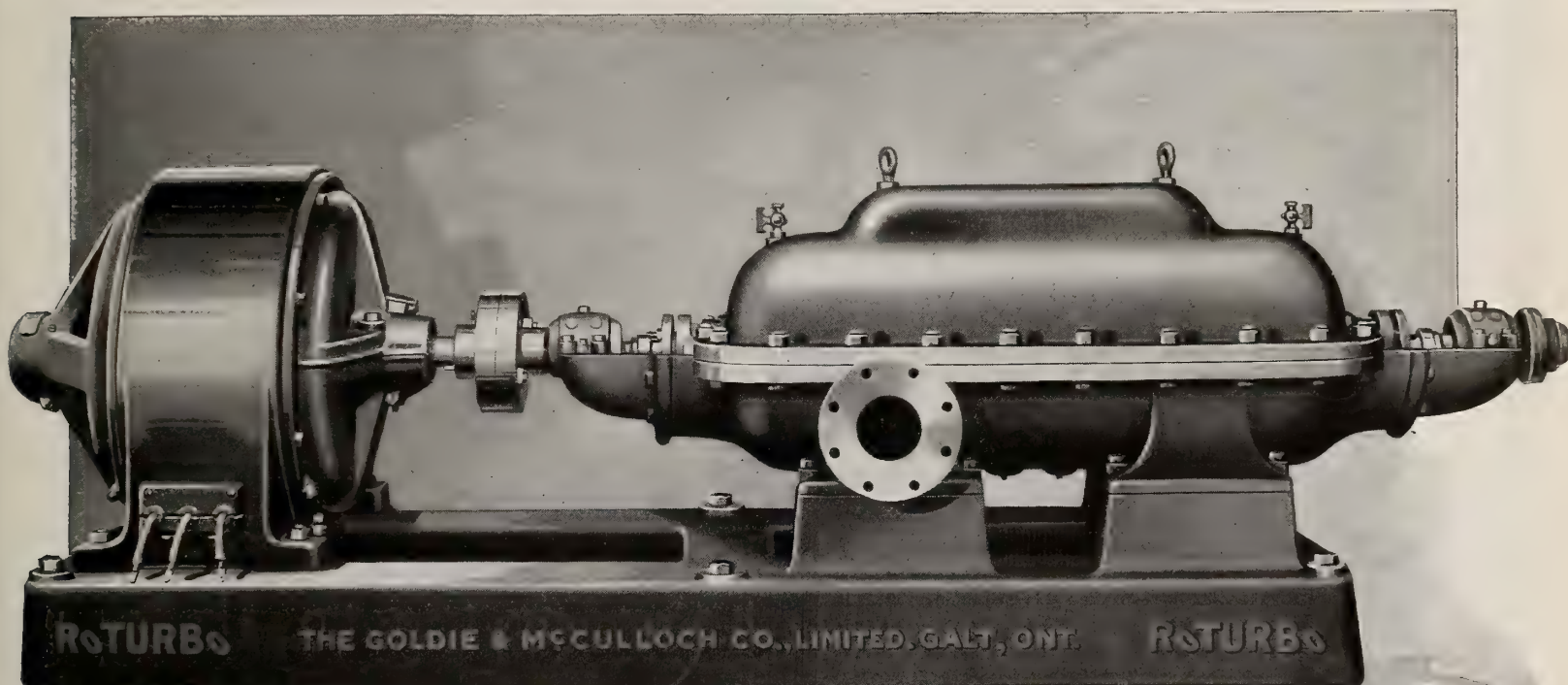


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This Company's Appraisal Service has won a large recognition as an important factor in modern business management as is evidenced by the list of clients furnished herewith.

REPRESENTATIVE APPRAISALS made by The Canadian Appraisal Company, Limited, for Financial and other purposes.

	No. of Properties		No. of Properties
Acadia Coal Company	4	Laurentide Company	1
Acadia Sugar Refining Company	2	Lyall, Peter, & Sons Construction Co. . .	1
Algoma Steel Corporation	1	Macdonald Company, Limited, The A. . .	10
Ames-Holden-McCready, Limited	3	Maisonnette, City of	Various
Anglo-Canadian Leather Company	2	Manitoba Bridge and Iron Works	1
Bank of Hamilton	36	Maple Leaf Milling Company	8
Belding-Paul-Corticelli, Limited	3	Massey-Harris Company, Limited	1
Berliner Gram-O-Phone Co.	1	Matthews-Blackwell, Limited	5
Booth, J. R.	1	Matthews and Scott	3 fisheries
Canada Bread Company	6	Merchants Bank	39
Canada Cement Company	11	Monarch Knitting Company	4
Canada Foundries and Forgings, Limited ..	3	Murray-Kay, Limited	2
Canada Furniture Manufacturers, Limited ..	11	McClary Mfg. Company	10
Canada Machinery Corporation	5	National Breweries, Limited	8
Canada Malting Company	5	National Brick Company of Laprairie ..	1
Canada Starch Company	2	National Iron Works, Limited	1
Canada Steamship Lines	Various	New Brunswick Telephone Company	Various
Canadian Bank of Commerce	74	Nova Scotia Steel & Coal Co.	2
Canadian Car and Foundry Company	3	Ogilvie Flour Mills Company, Limited ..	4
Canadian Consolidated Felt Company	1	Ontario Steel Products, Limited	3
Canadian Consolidated Rubber Company	10	Ontario Wind Engine and Pump Company ..	1
Canadian Converters' Company	3	Page-Hersey I. T. & L. Co.	3
Canadian General Electric Company	9	Pedlar People, Limited	1
Canadian Locomotive Company	1	Phoenix Bridge and Iron Works	1
Canadian Steel Foundries, Limited	2	Polson Iron Works	1
Canadian Salt Company	2	Provincial Paper Mills	4
Carriage Factories, Limited	4	Province of Manitoba	Various
Chicoutimi Pulp Company	2	Rat Portage Lumber Company Limited ..	4
Collingwood Shipbuilding Company	1	Riordon Pulp and Paper Company	1
Corby, H., Distillery Company	1	Rolland Paper Company Limited	2
Davidson, Thomas, Manufacturing Co. . .	1	Royal Bank of Canada	58
Davies, William, Company	4	Sawyer-Massey Company, Limited	1
Dominion Bridge Company	1	Shawinigan Water and Power Company ..	1
Dominion Cannery, Limited	62	Sherwin-Williams Company of Canada ..	5
Dominion Glass Company	5	Smart-Woods, Limited	5
Dom. Manufacturers, Limited (Caskets) ..	7	St. Lawrence Sugar Refining Company ..	1
Dominion Realty Company	300	Stand. Chem., Iron & Lumber Company ..	12
Dominion Sugar Company	3	Standard Clay Products, Limited	2
Dominion Textile Company	10	Steel Company of Canada	6
Dunlop Tire & Rubber Goods Company ..	1	Steel and Radiation, Limited	3
Eddy, E. B., Company	2	Tooke Brothers, Limited	2
Edwards, W. C., and Company	4	Toronto Paper Manufacturing Company ..	1
Frost & Wood Company	1	Tuckett Tobacco Company	3
Goldie & McCulloch Company	2	Union Bank of Canada	110
Gordon, Ironside & Fares Company	10	Union Lumber Company, Limited	39
Gutta Percha and Rubber Company	1	Vaudreuil Dairy and Stock Farm	1
Hamilton Bridge Works	2	Vulcan Iron Works, Limited	1
Harris Abattoir Company	1	Walker, Hiram, & Sons, Limited	1
Inglis, J., & Sons	1	Western Canada Flour Mills Company ..	3
Lake of the Woods Milling Company	66		

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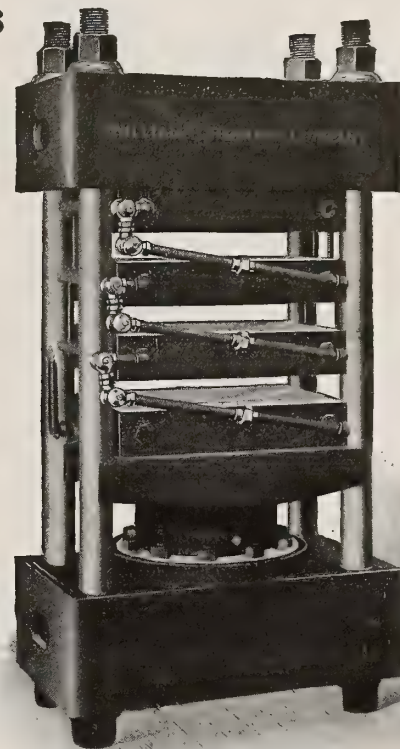
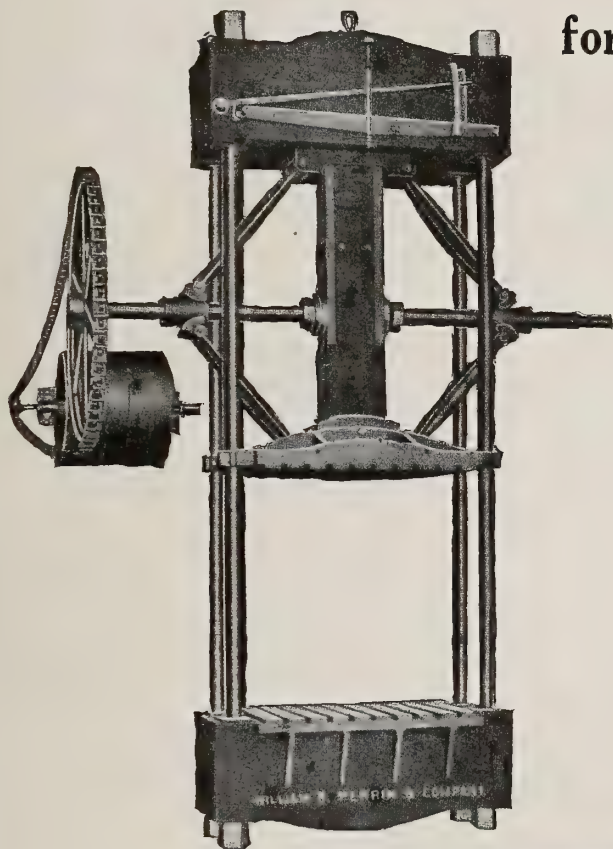
HEAD OFFICE, 17 ST. JOHN ST.
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NEW YORK
EQUITABLE BLDG.

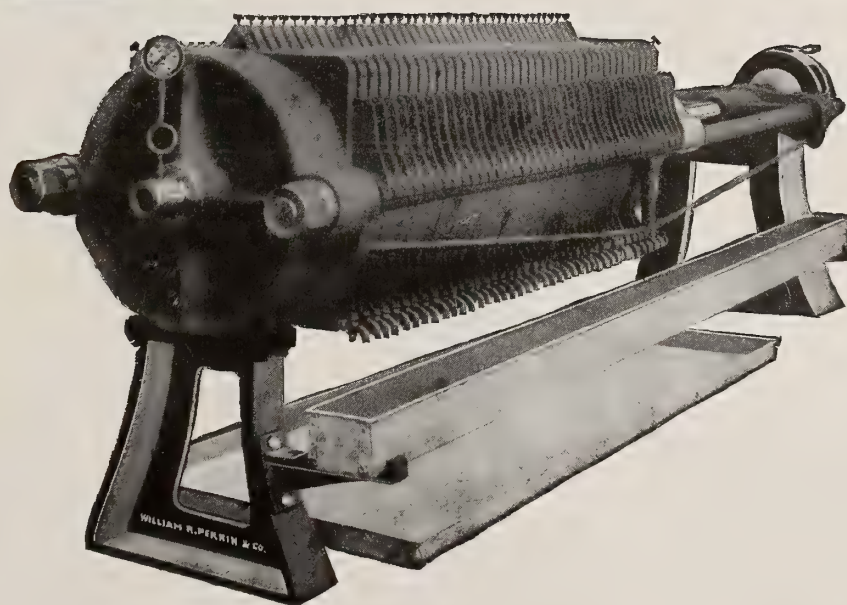
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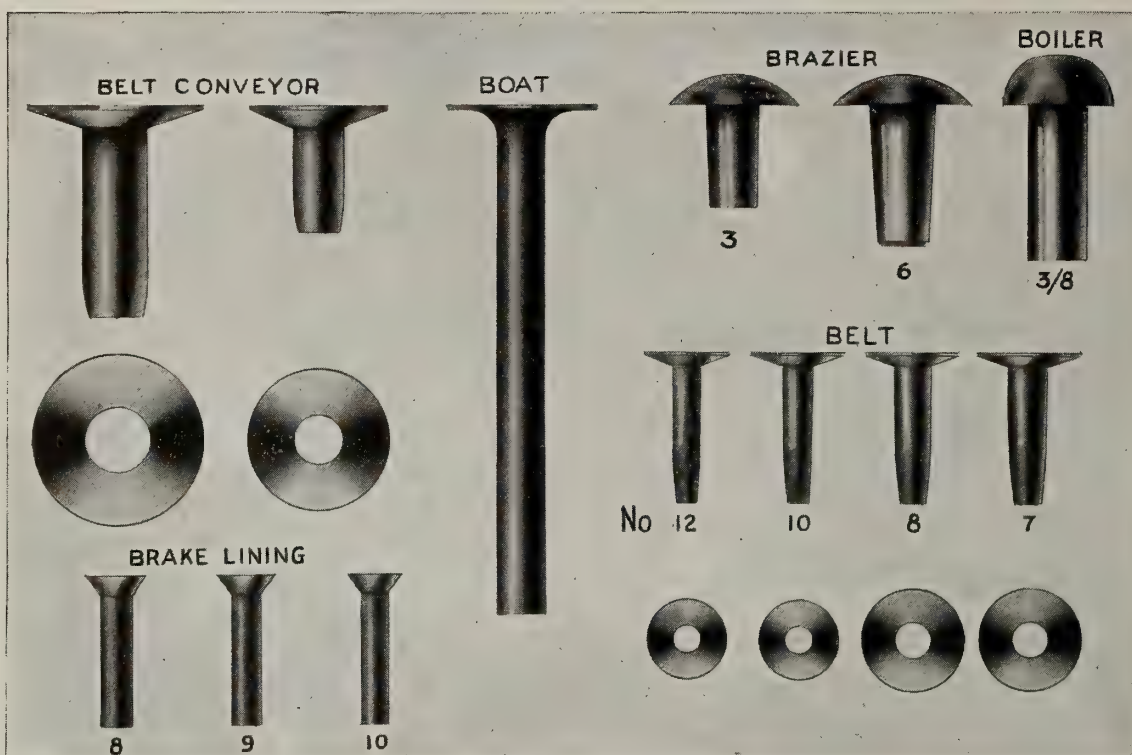
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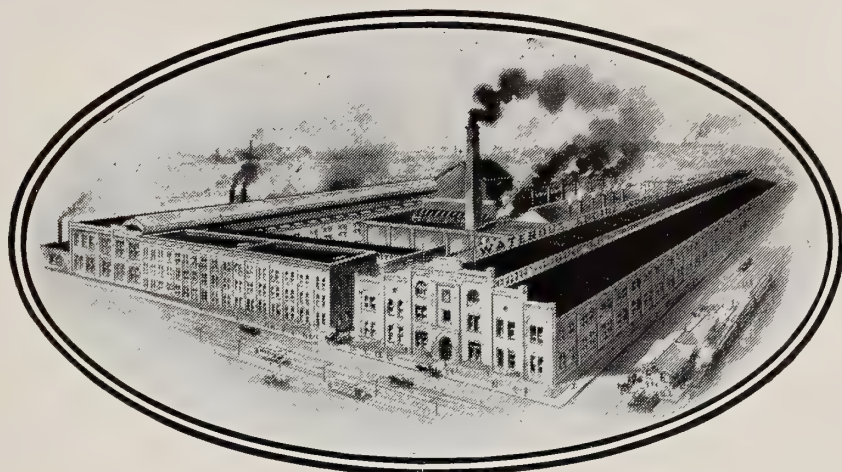
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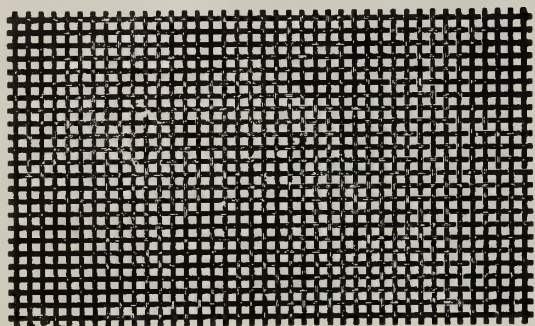
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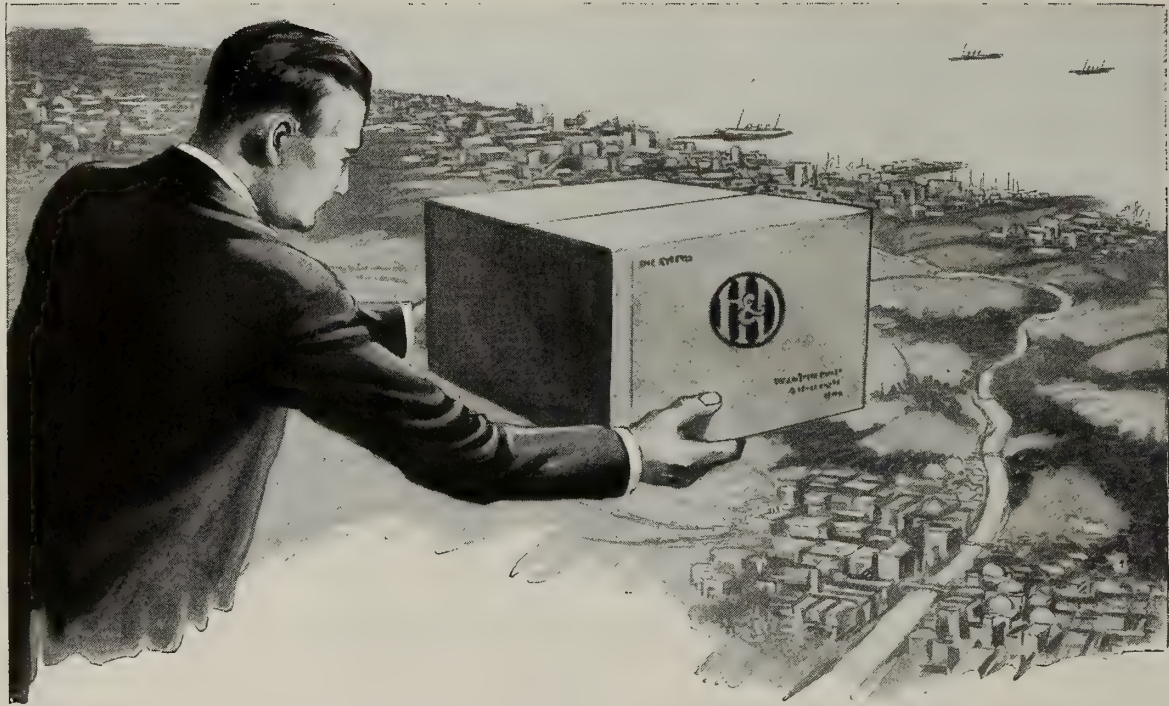
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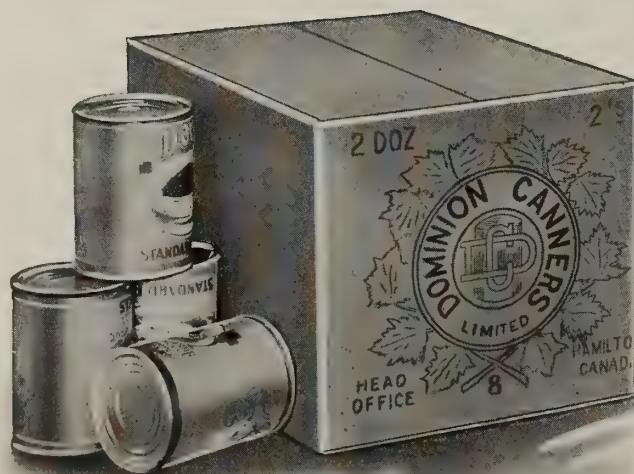
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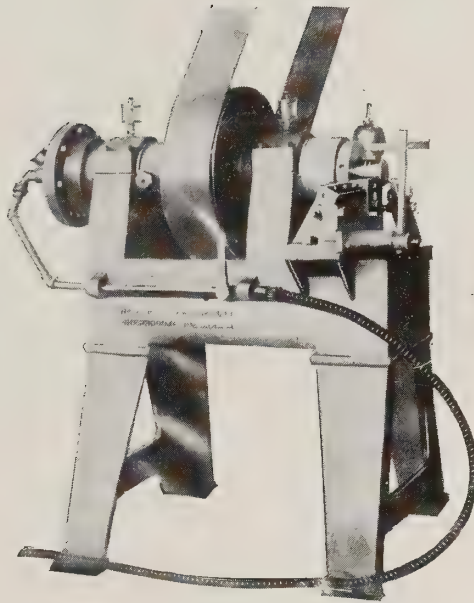
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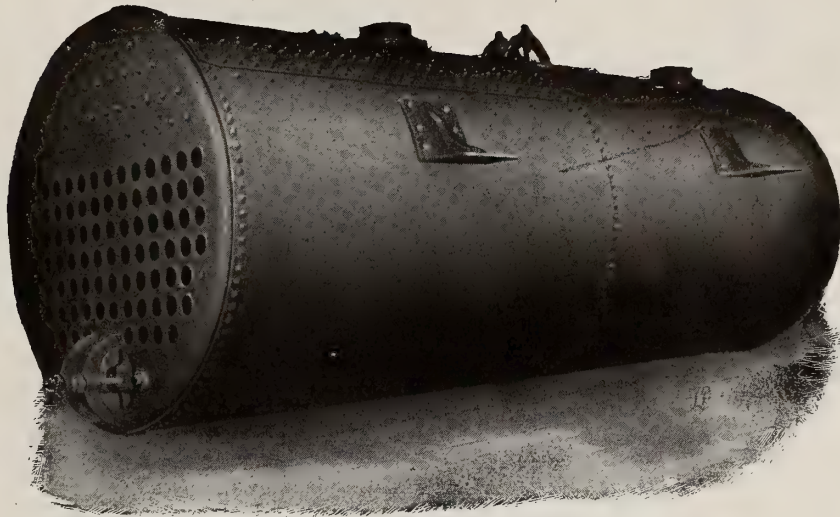
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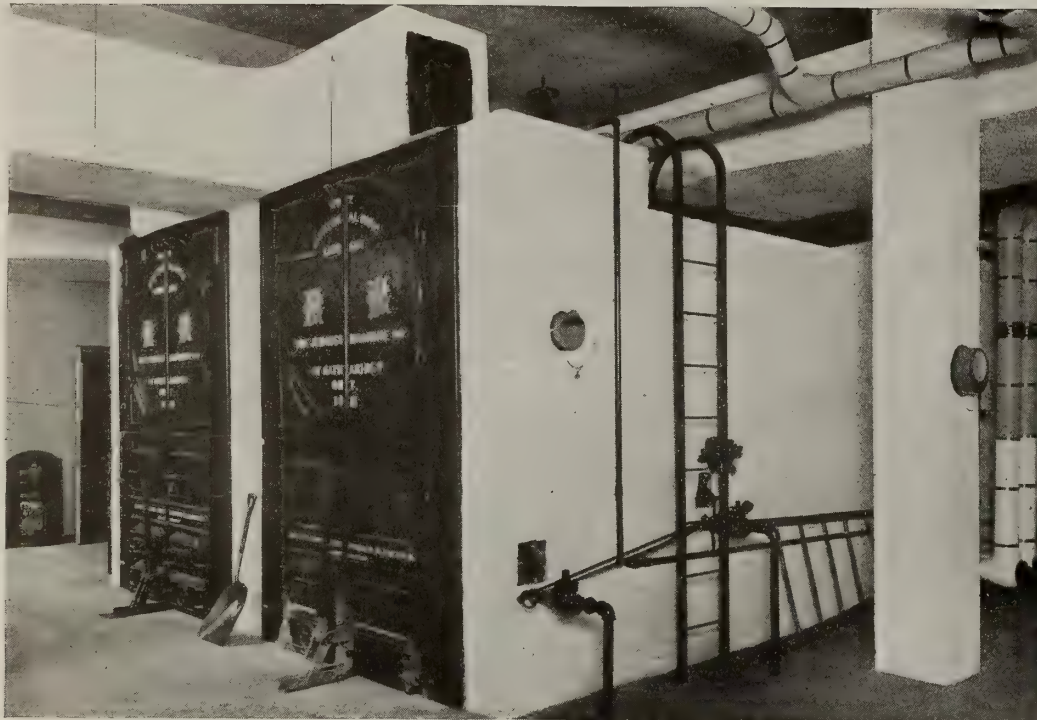
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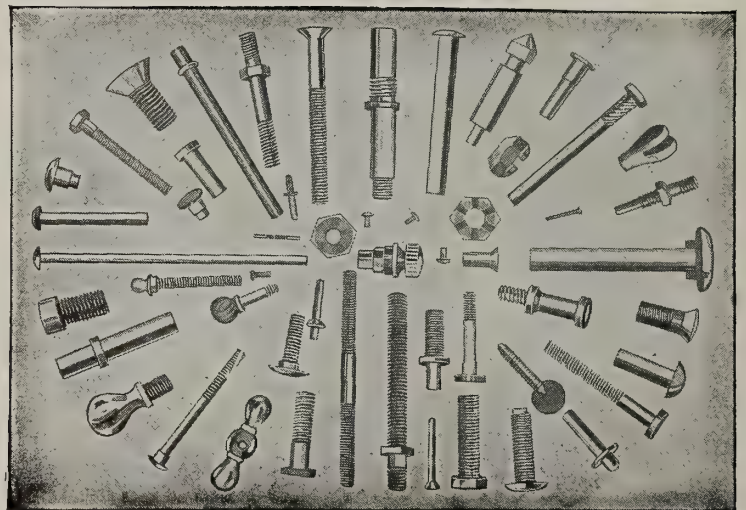
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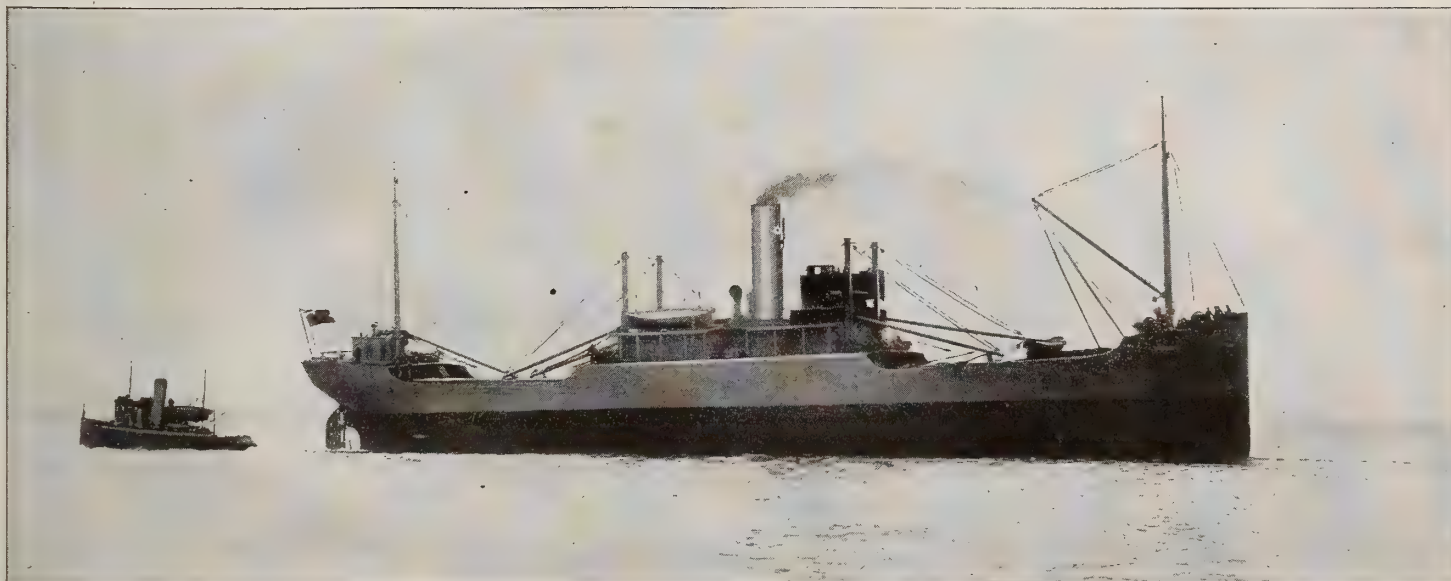
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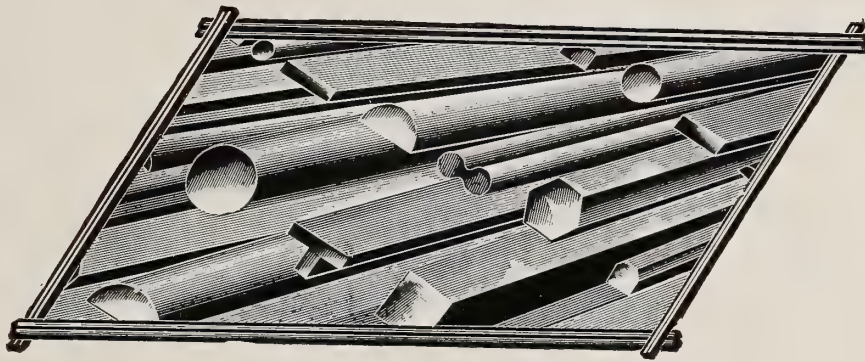
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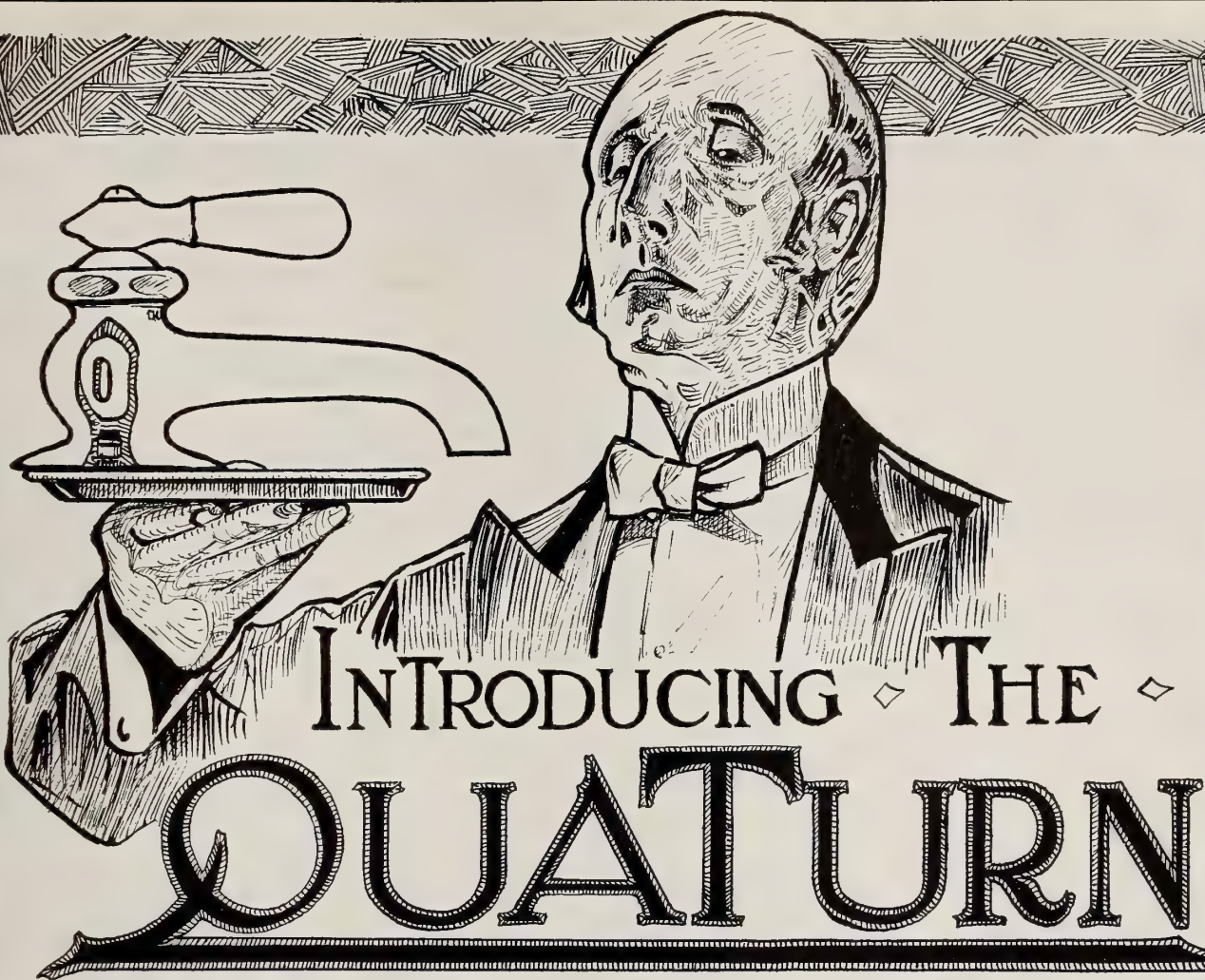
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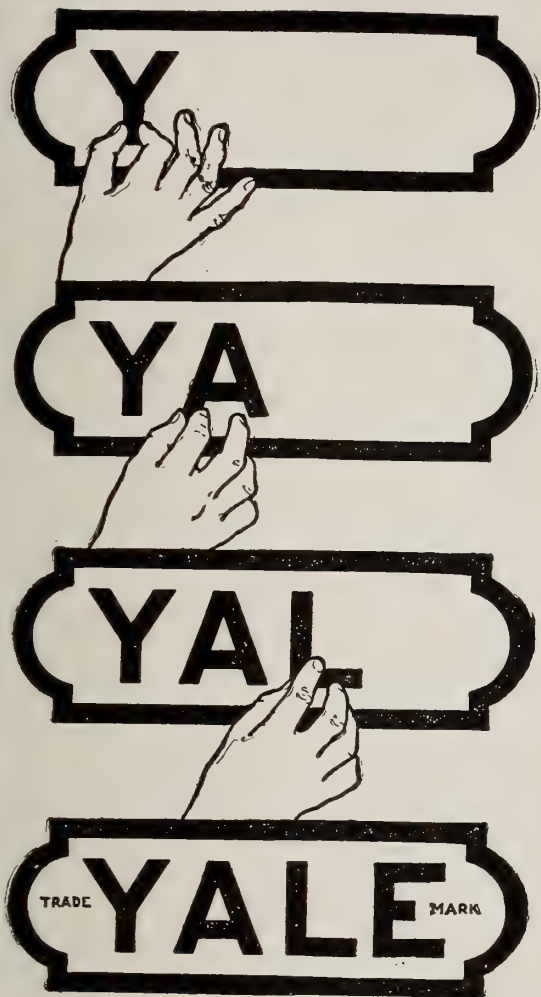
THEREFORE, if in these trying times, we do not deliver promptly to you such of the products of our Mills or Blast Furnaces as you may need, console yourself with the thought that through us, you are rendering Service to the Empire and to the Cause that matters most for the Liberty, Justice and Freedom of the World.

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HAMILTON

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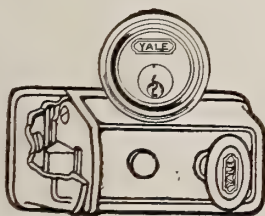




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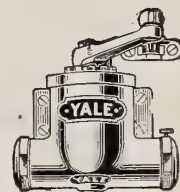
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Yale Door
Closer



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(Dartmouth
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It was selected on its record of past performances because the duties were exceptionally exacting.

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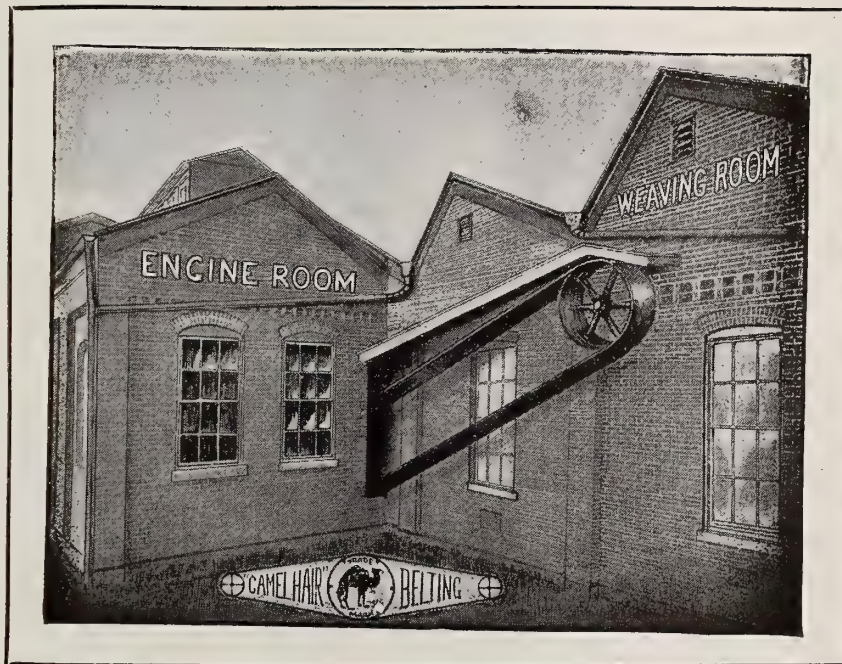



HONOR ROLL OF BELTING

THIS REDDAWAY



*Stock 1 in.
to 24 in.
wide*



*We also
manufacture
"Camelata"
Belting*

*"Black
Duck"
Belting*

*"Norse"
Belting*

Has been running **TWENTY-EIGHT YEARS.**
10 years exposed to Cold, Rain, Sun, Ice.
18 years covered in.

REDUCE YOUR BELTING BILLS

The loss of speed and power by slip and creep is, for any given load, **TWICE** as much with leather belts as with "Camel" Belts.

The "Camel" Belt put on and forgotten, because it gives no trouble, is the belt that pays dividends.

SOLE MAKERS—BEWARE OF IMITATIONS—

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Made in Canada

SOLD THE WORLD OVER

Second to None in

QUALITY, GAS YIELD
AND PACKAGE

Works:

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Que.

MANUFACTURED BY

Canada Carbide Company, Limited
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BY USING THE BEST

**EXCELSIOR
ANHYDROUS
AMMONIA**

STANDARD FOR QUALITY

MADE ONLY BY

Canadian Ammonia Co.
LIMITED
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Made in Canada

J. L. Goodhue & Co., Limited
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SUPERIOR QUALITY LEATHER
BELTING AND LACE LEATHER

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CLIMAX LEATHER BELTING SADLER & HAWORTH

TANNERS & MANUFACTURERS

"LEATHER LIKE GOLD HAS NO SUBSTITUTE"



“AMPHIBIA” Waterproof Leather Belting

It is the very finest quality of leather belting made in the world—as near perfection as any product man-made may be. The man who knows Belting recognizes its superiority at a glance; in service, “Amphibia” delights him.

“Amphibia” Waterproof Leather Belting “costs less per day of service” simply because we put into it more care in the selection of hides, more care in tannage, more care in the butts used, more care in the cutting, stretching, splicing and trimming. All this extra money spent on the making of “Amphibia” insures longest life and least cost per day of service.

“AMPHIBIA” Single and Double is specially made for paper and pulp mills; bleacheries and dye works; mines and smelters; rolling mills and saw mills; linseed and cotton oil mills; brick, stone and cement works; tanneries.

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“AMPHIBIA” LAUNDRY SPECIAL, Double, for driving washing machines, extractors, etc., in the steam - and - moisture - laden atmosphere of laundries.

“AMPHIBIA” THRESHER, Single and Double, is for use where belting is exposed to the weather, as in thresher work, farm engines, etc., etc.

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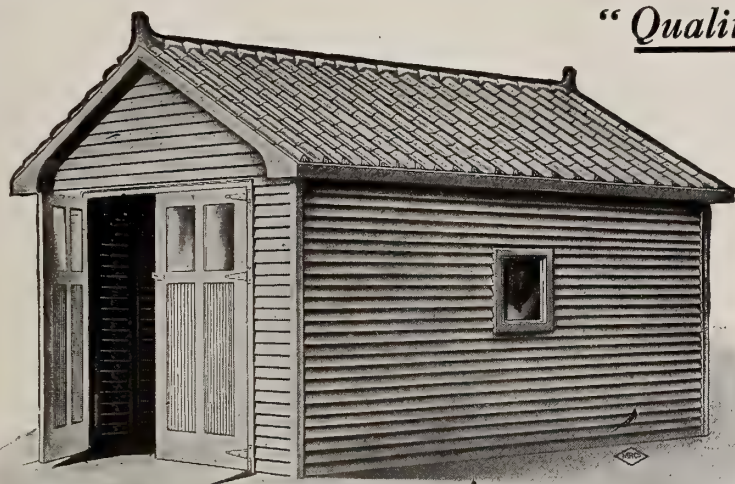
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WINNIPEG
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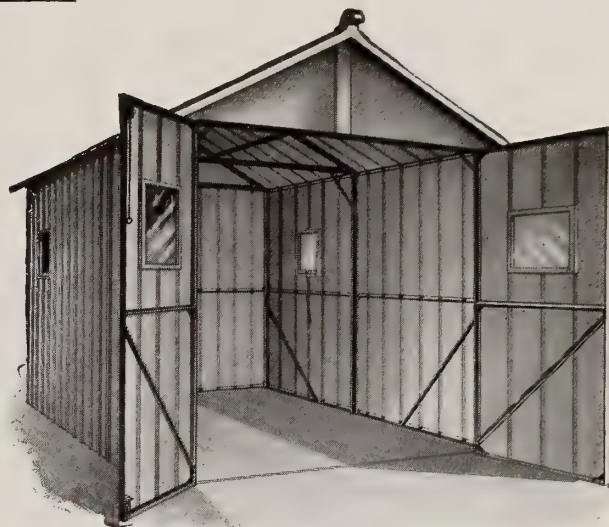
ST. JOHN, N.B.
149 Prince William St.

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VANCOUVER, B.C.
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"Quality First"



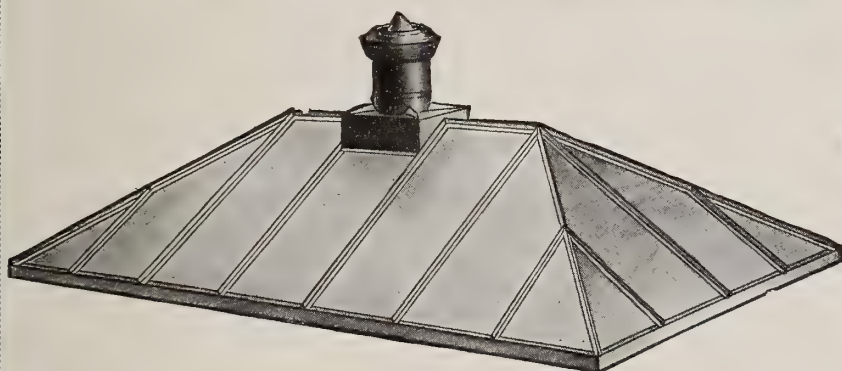
The "Urban" Style



The "Empire" (All-Steel) Type

Garages and other Light Buildings

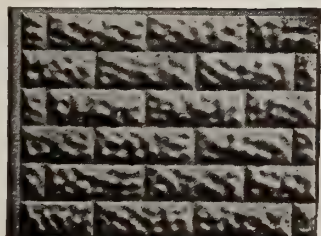
Our Leaflets show SEVEN DIFFERENT TYPES of light buildings which we furnish or which are easily built from stock sizes of lumber using our Materials as a covering. We furnish complete plans, etc. Get our proposition if needing anything of this kind. Our wide range enables us to suit any taste or purpose.



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We make a wide range of styles of Skylights and Ventilators, separate, or combined as illustrated. Any desired size. We also manufacture a very superior line of

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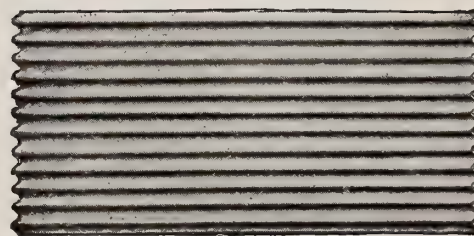


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Metallic Ceilings

never crack or fall off

Fireproof, sanitary and absolutely permanent. Designs suitable for Offices, Warehouses, Stores and Residences. Can be put on over any surface. Booklet mailed on request.



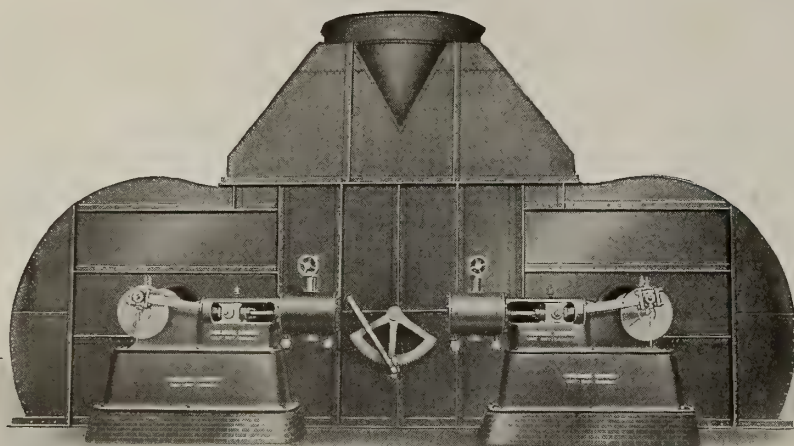
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The Metallic Roofing Co., Limited

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55 years of success-
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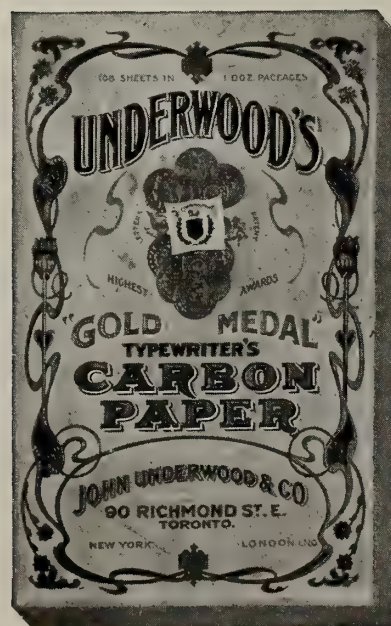
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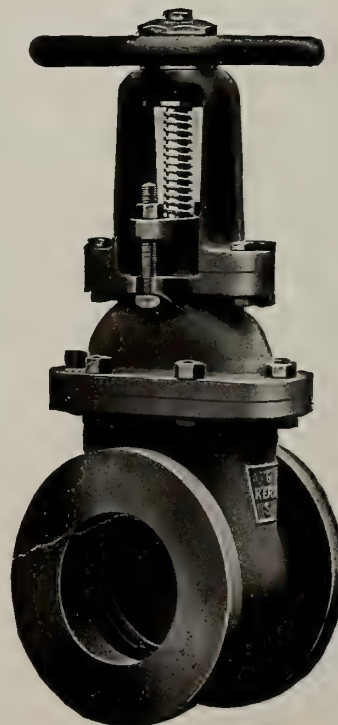
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construction.
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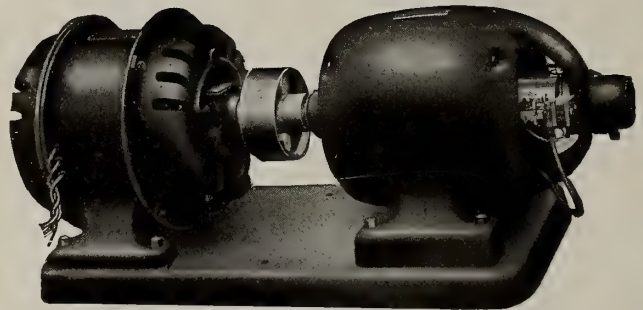
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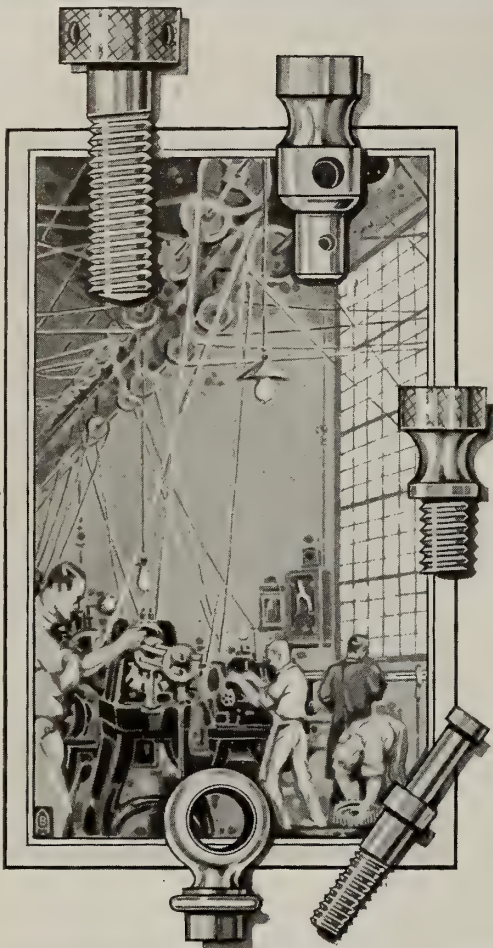
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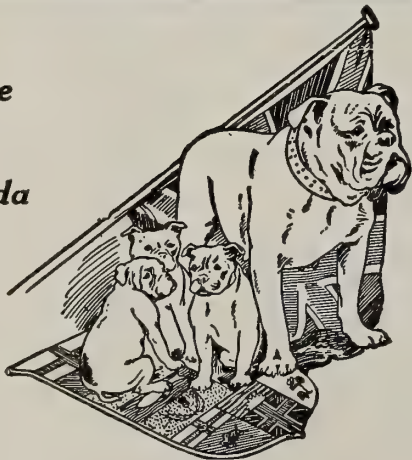
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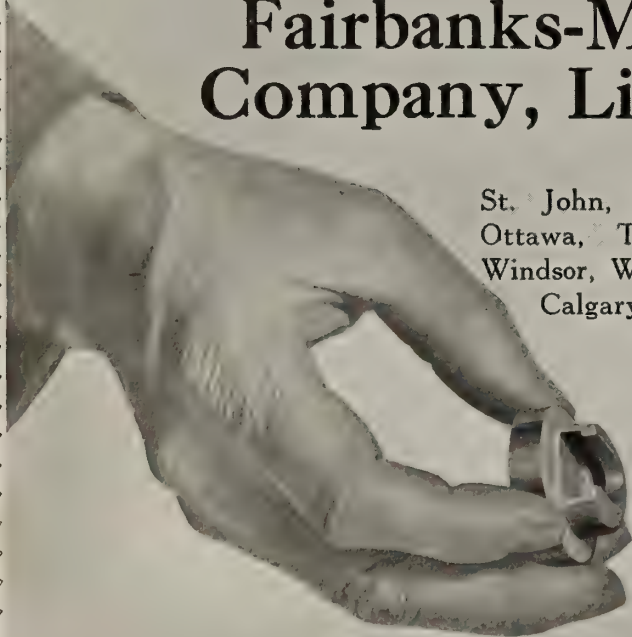
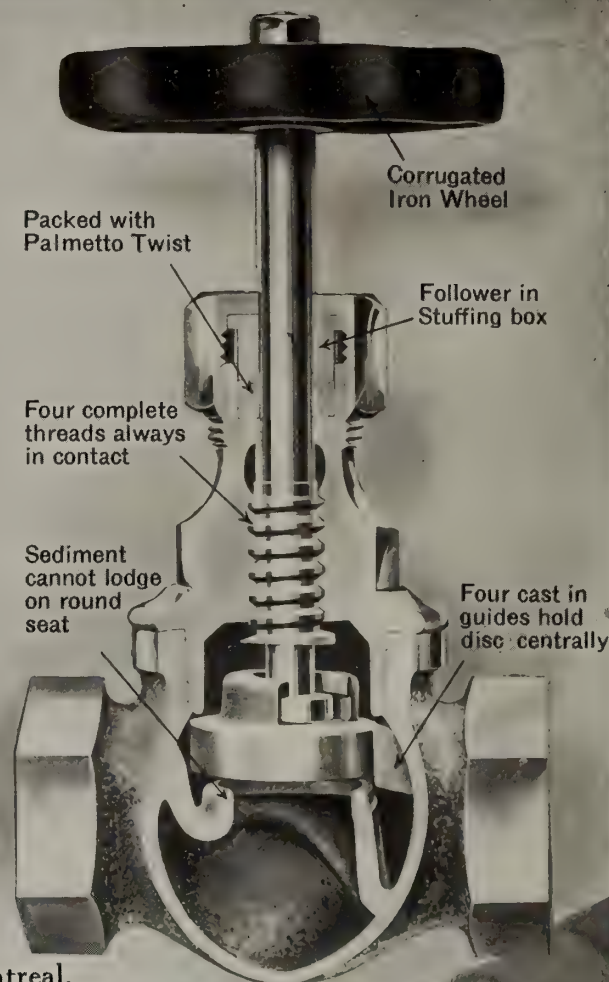
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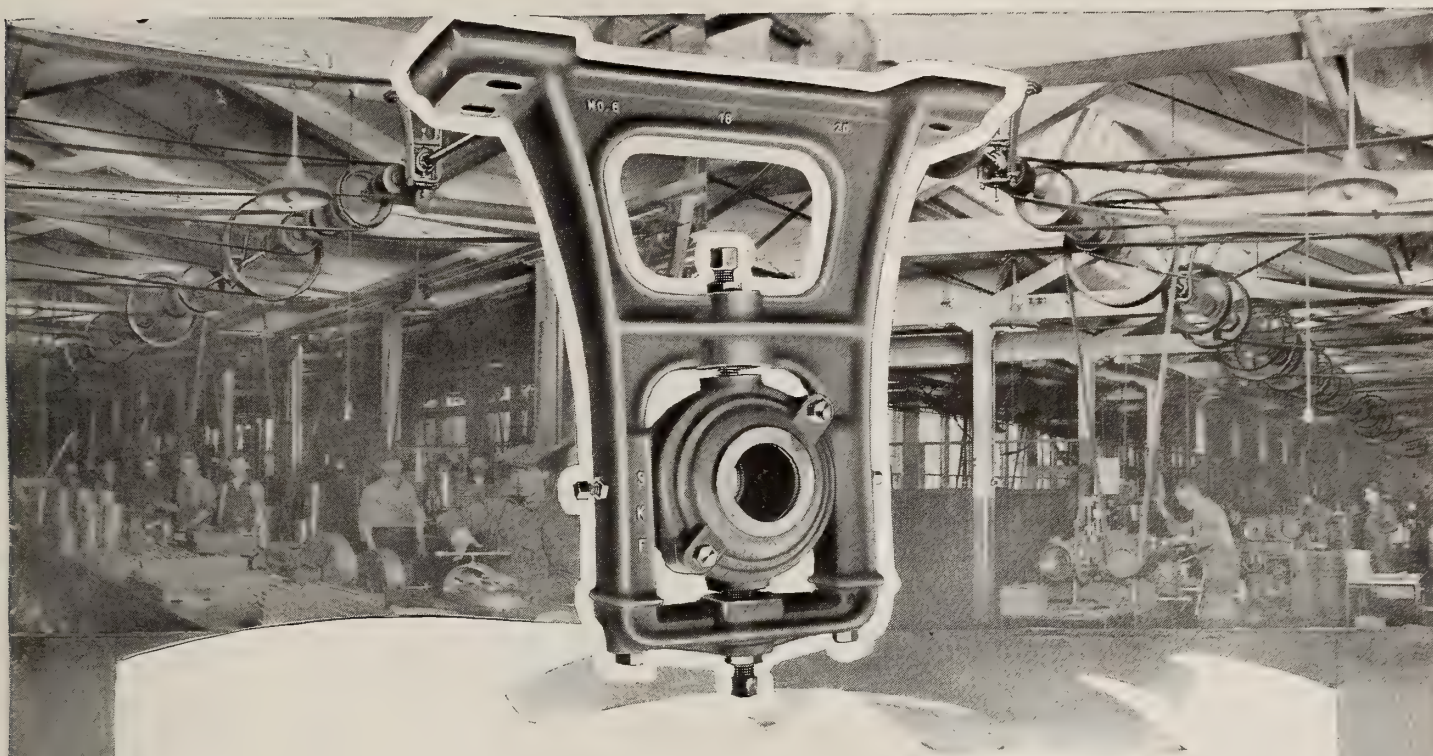
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The only tool required is a wrench to remove the bonnet. The disc slips on and off with the fingers.





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No shafting is as free from friction as that mounted on S.K.F. Ball Bearings. No plant has as little trouble as the one using S.K.F.

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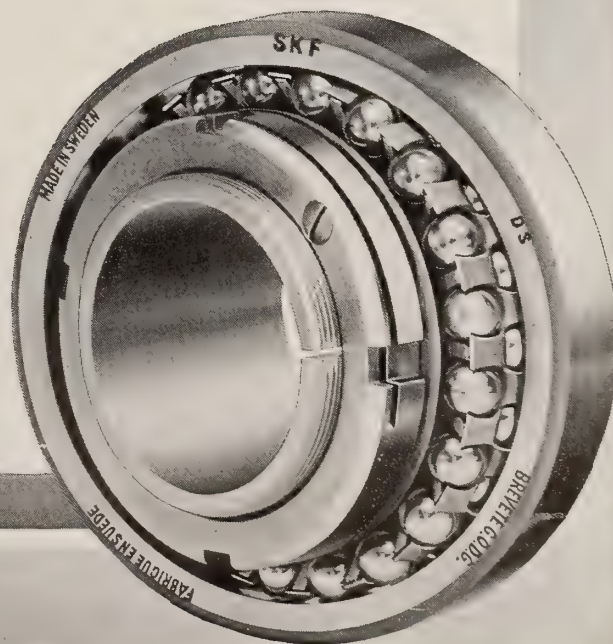
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GARLOCK



PACKINGS



Style No. 777

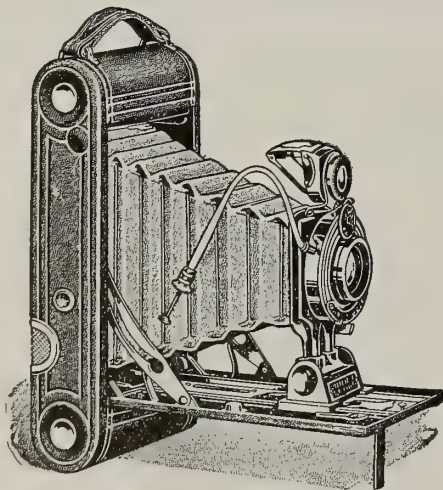
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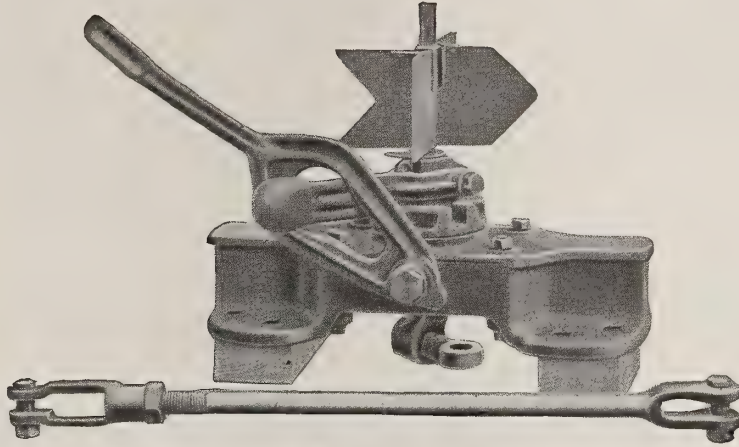
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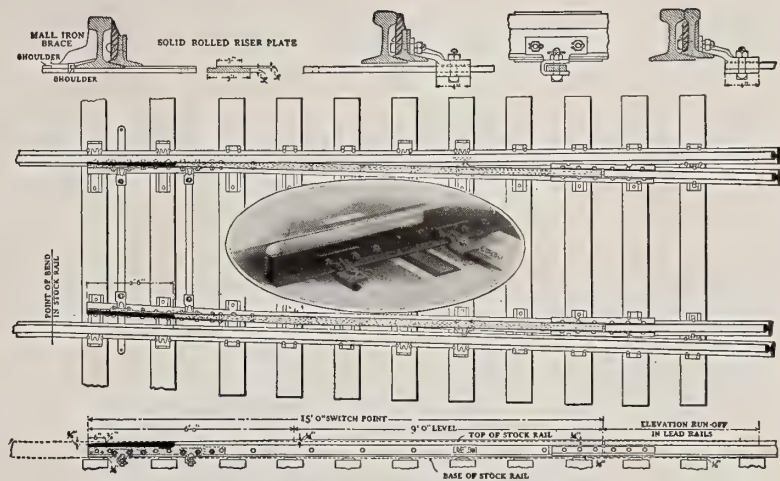
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Railroads should use Ramapo Manganese Pointed Switch Style No. 12

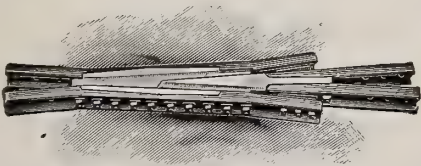
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This Reinforced Manganese Frog will in Hard Service outwear all rail frog Four to Six Times.



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This is the RAMAPO MANGANESE POINTED SWITCH which will outwear SIX TO TEN ordinary all rail switch points. Try it somewhere in the hardest place you know of.

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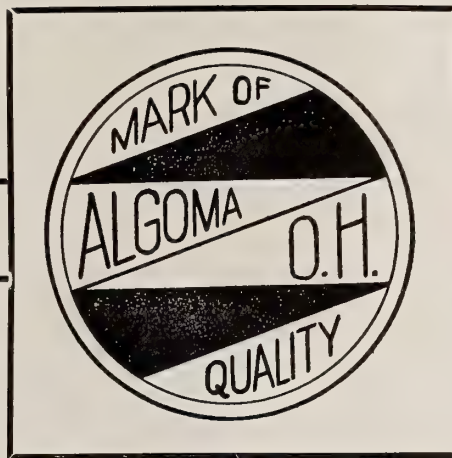
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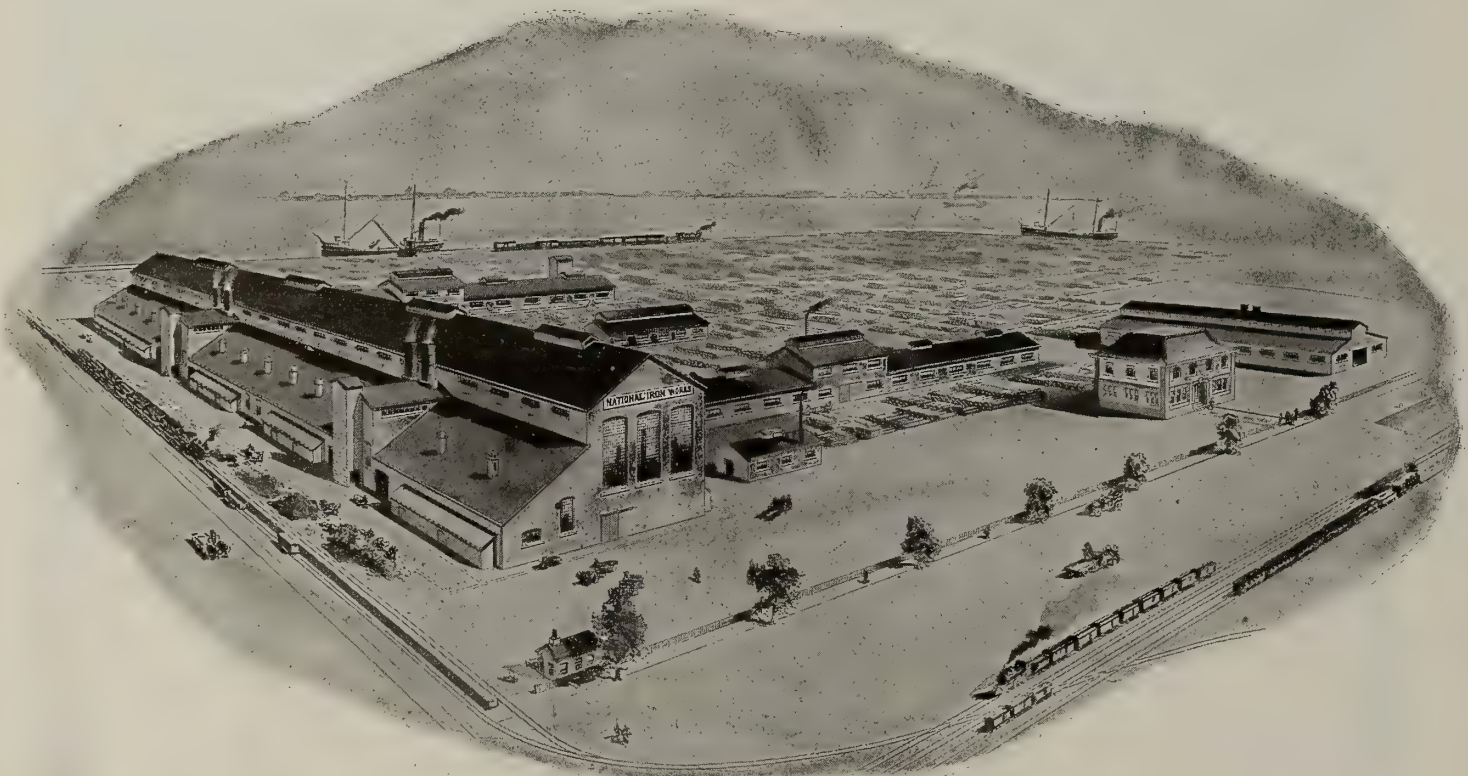
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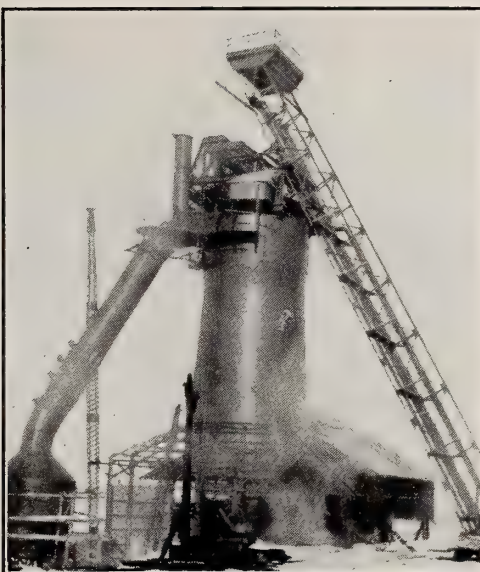


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Truss and
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Through,
Deck and
Swing Types
Turntables

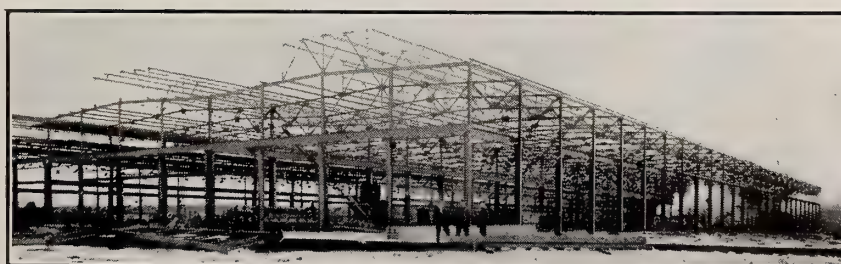


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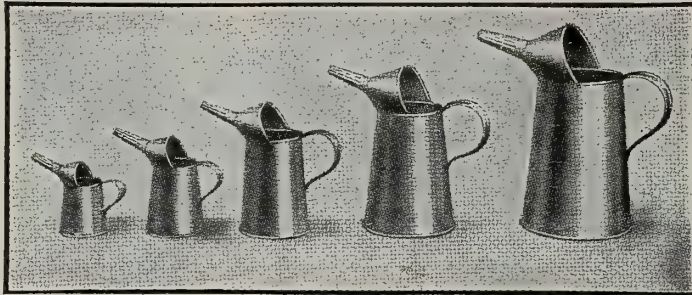


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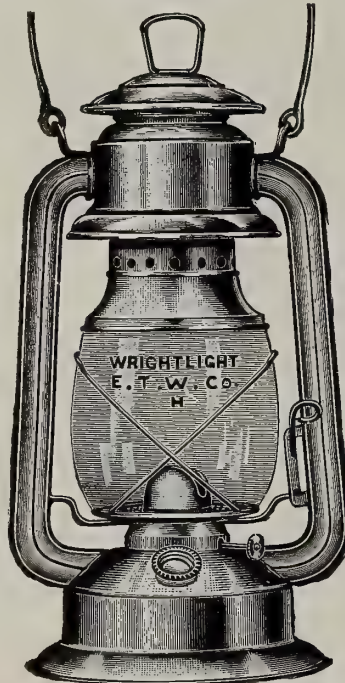
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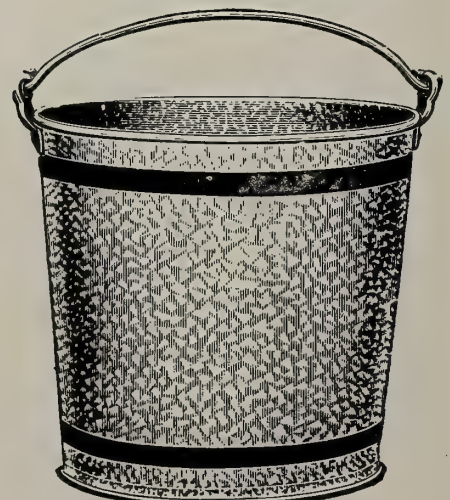
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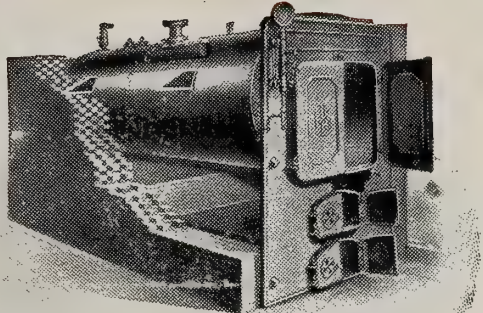


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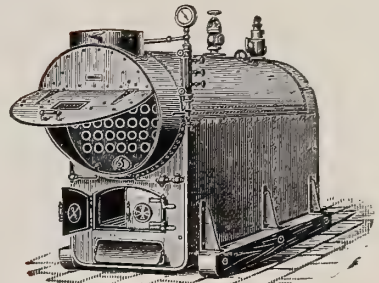
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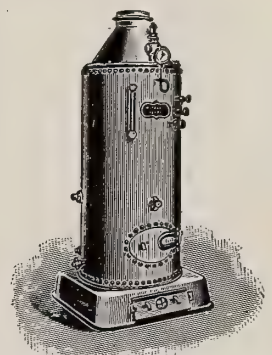
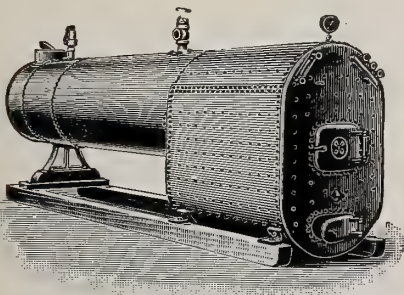


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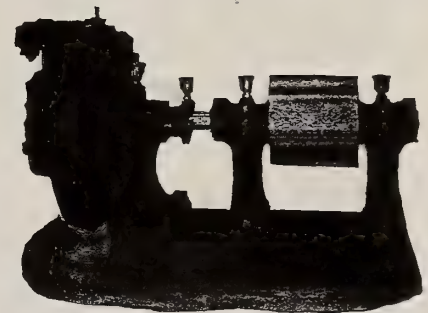
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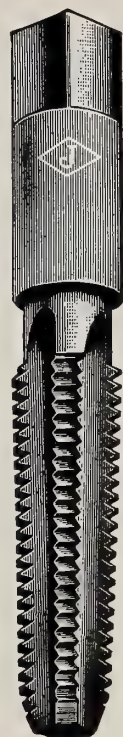
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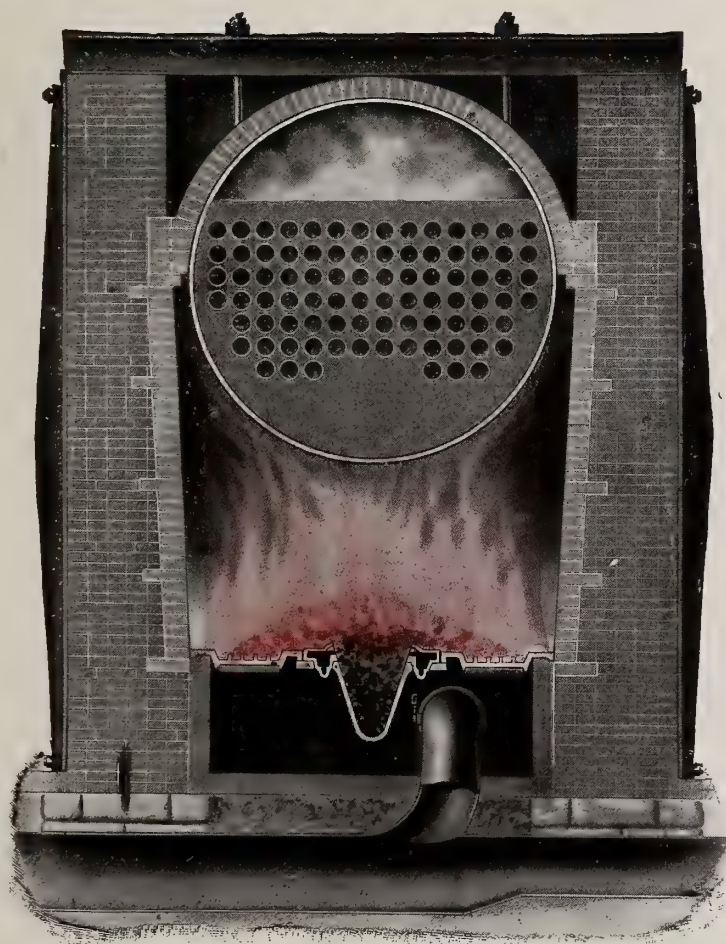
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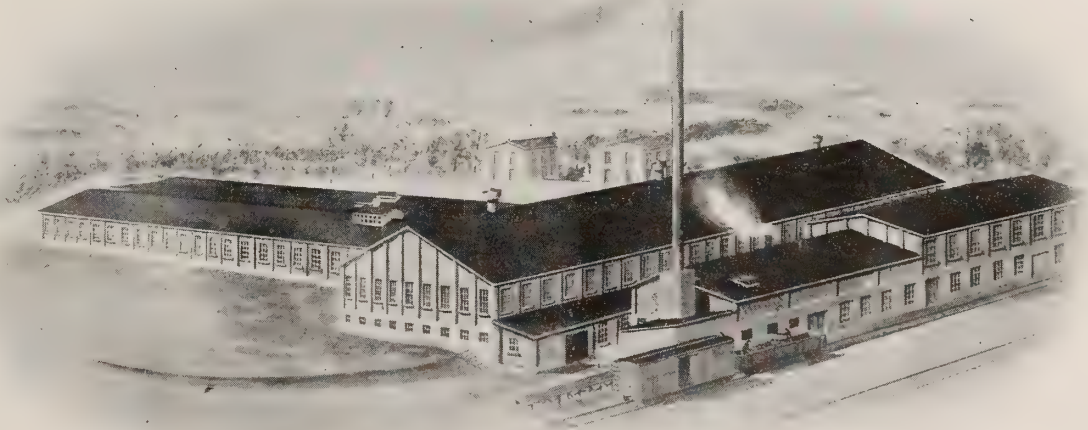
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Page Eighteen

Illustrations Actual Size.

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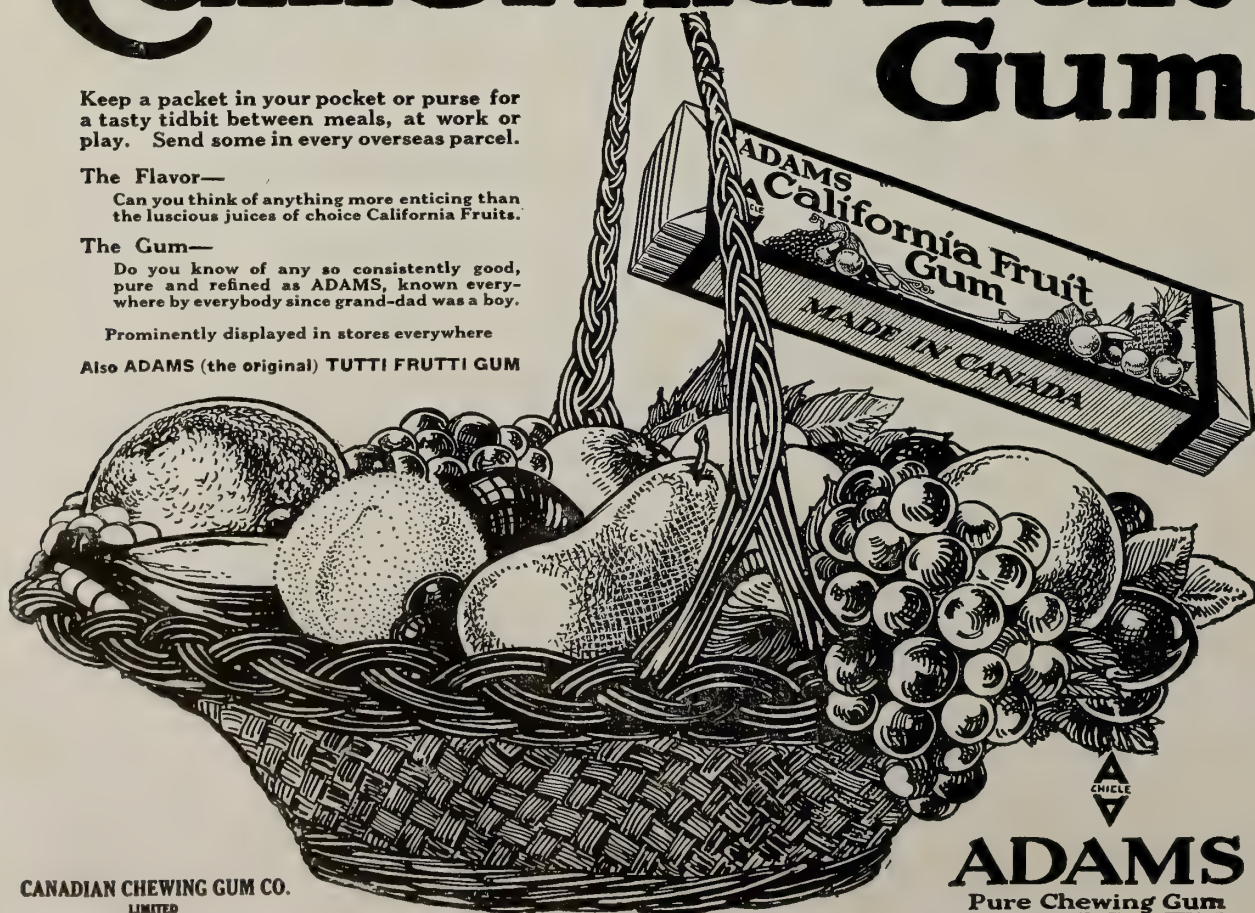
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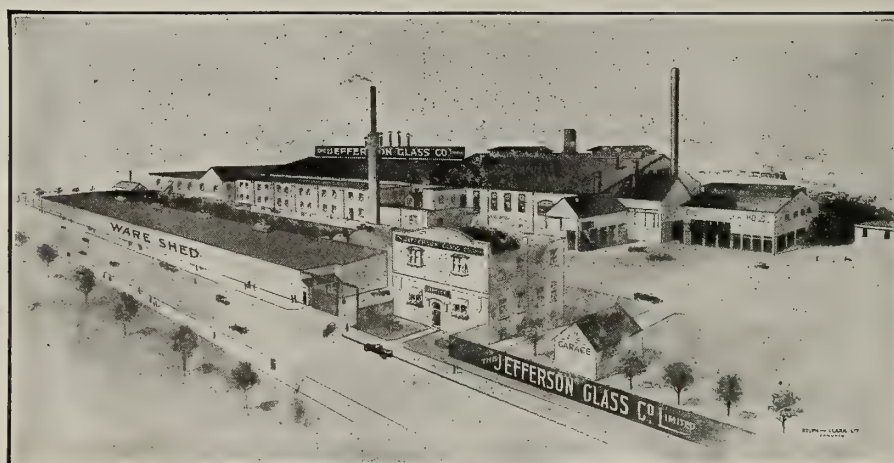
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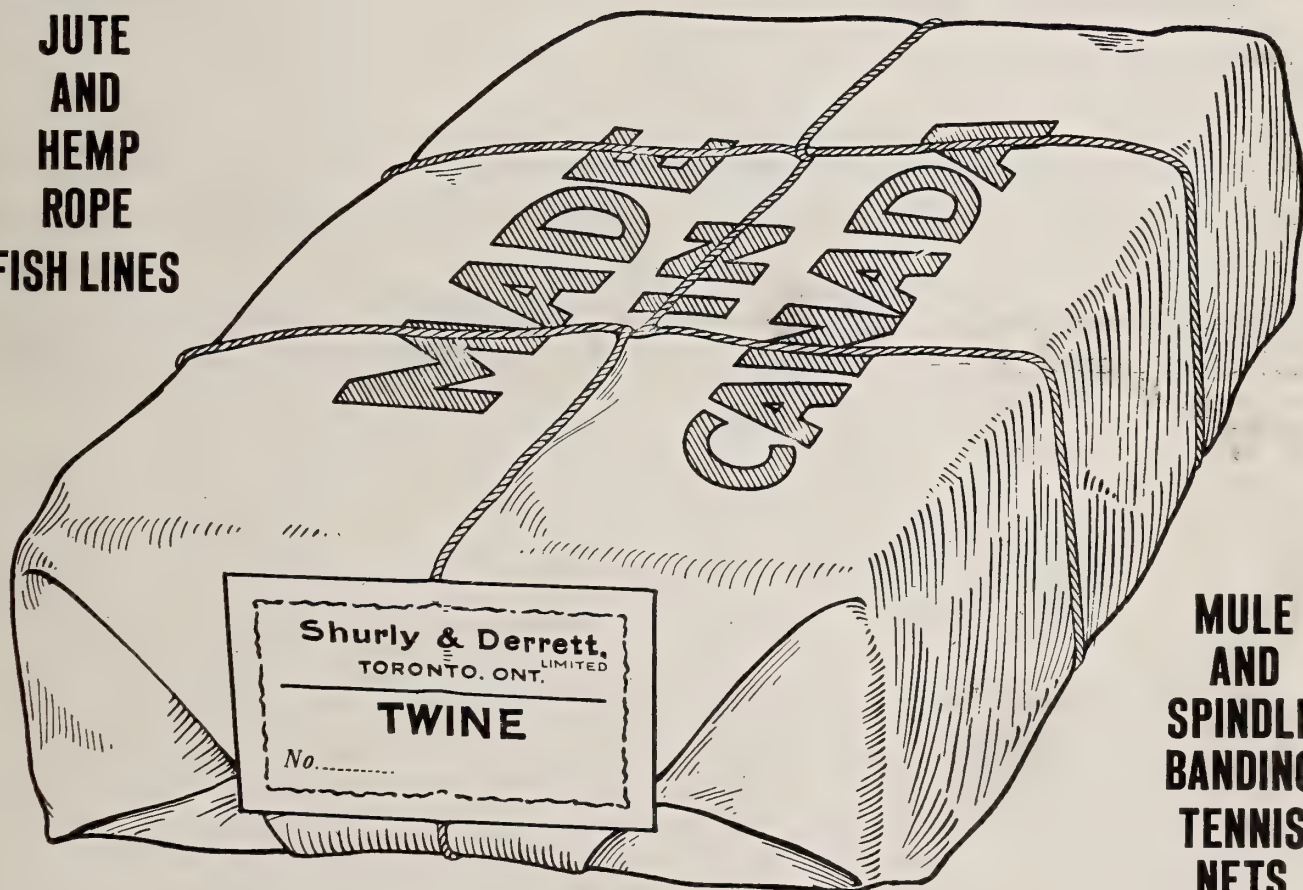
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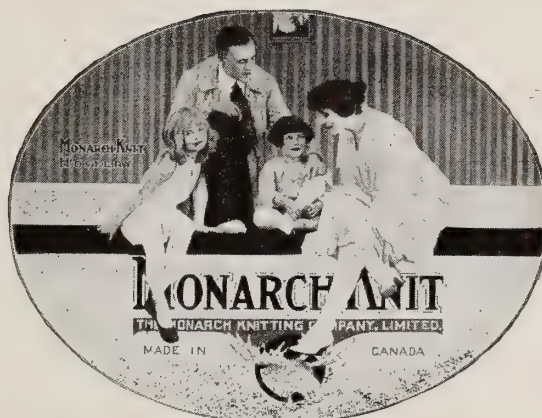


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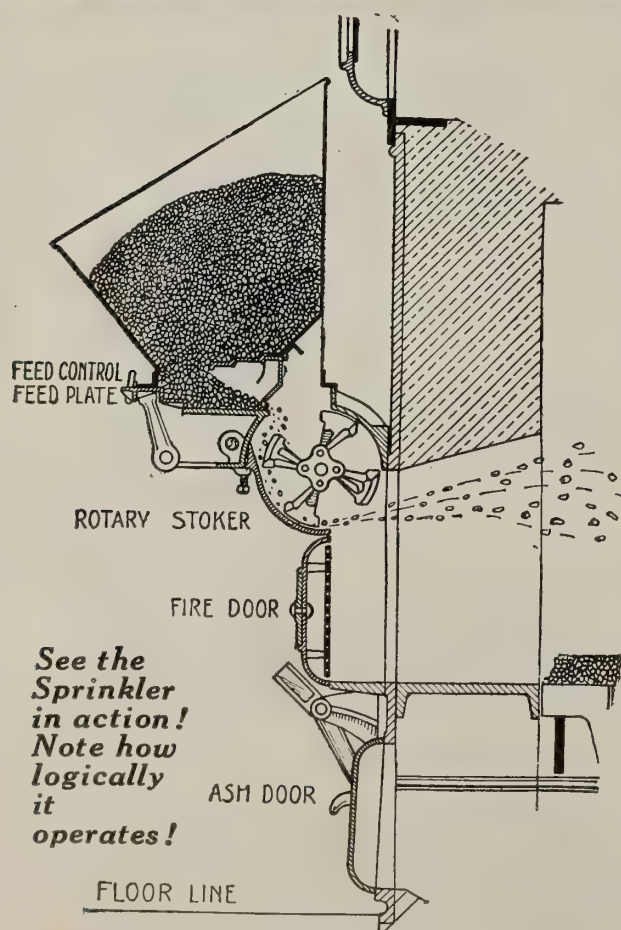


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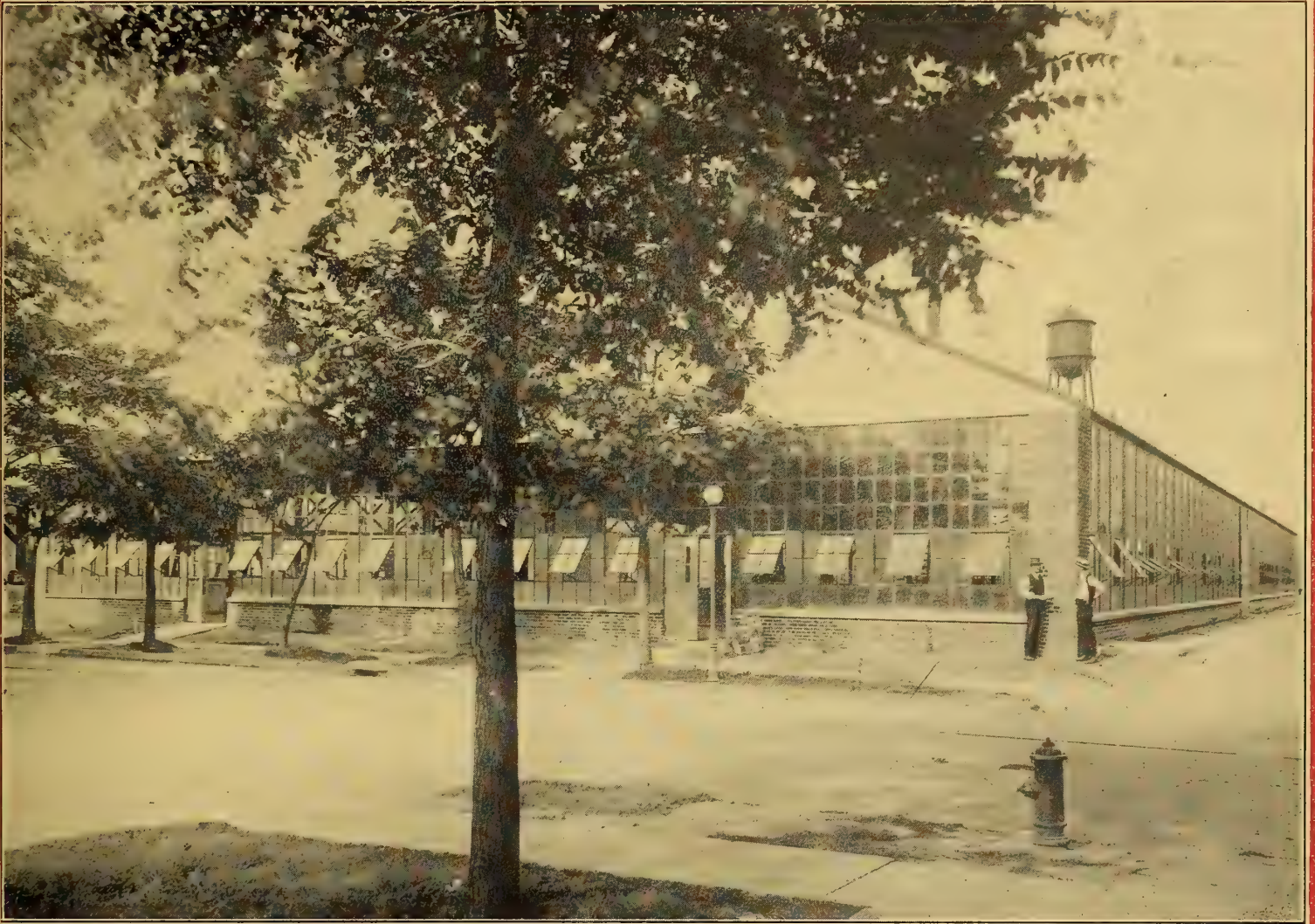
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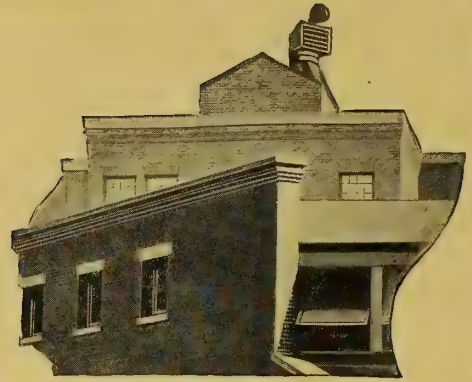
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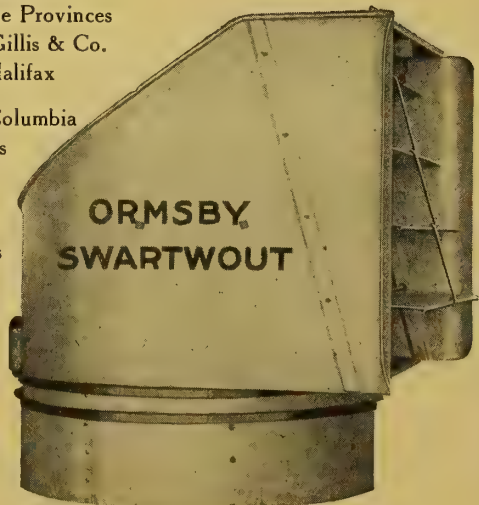
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MONTREAL
WINNIPEG, CALGARY
REGINA



Associated with the Metal Shingle & Siding Co., Limited

UNION BANK OF CANADA

Established 1865

HEAD OFFICE, WINNIPEG

"THE PIONEER BANK OF WESTERN CANADA"

Paid-up Capital	-	-	-	\$5,000,000
Reserve Fund	-	-	-	3,400,000
Total Assets at Nov., 1917, over	-			140,000,000

BOARD OF DIRECTORS

Hon. President—SIR WILLIAM PRICE

President—JOHN GALT, Esq.

Vice-Presidents

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G. H. THOMSON, Esq.

Directors

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E. L. DREWRY, Esq.

WM. SHAW, Esq.

H. B. SHAW, General Manager

J. W. HAMILTON, Assistant General Manager



Head Office, Winnipeg

Attention is particularly drawn to the advantages offered by the Foreign Exchange Department of our London (England) Office, and Merchants and Manufacturers are invited to avail themselves of the Commercial Information Bureau established at that Branch, and also at our New York agency, 49 Wall Street, New York City.

To Merchants, Manufacturers and Business Men Generally

The Union Bank of Canada offers every form of service which a progressive bank can render—a service much more complete and valuable because of the network of over 300 Branches in Canada, extending from Halifax to Prince Rupert, over 200 of which are in Western Canada.

Correspondents in all cities of importance throughout Canada, the United States, the Continent of Europe, and the British Colonies. Collections made in all parts of the Dominion, and returns promptly remitted at lowest rates of exchange.

CORRESPONDENCE SOLICITED

The Merchants Bank of Canada

Head Office, MONTREAL Established 1864

Paid-up Capital	-	-	-	-	-	\$ 7,000,000
Reserve Funds	-	-	-	-	-	7,421,292
Total Deposits (May, 1918)	-	-	-	-	-	113,000,000
Total Assets (May, 1918)	-	-	-	-	-	144,000,000

President: Sir H. Montagu Allan, C.V.O.

Vice-President: K. W. Blackwell

Managing-Director: E. F. Hebden

General Manager: D. C. Macarow

Supt. of Branches and Chief Inspector: T. E. Merrett

Merchants and Manufacturers

are cordially invited to discuss all matters of finance with us.



The Merchants Bank is more than a mere depository—it is an Institution that stands ever ready to advise and assist its customers in regard to money matters, investments and business generally.

236 Branches in Canada Extending from the Atlantic to the Pacific.

NEW YORK AGENCY, 63-65 WALL ST.

ESTABLISHED 1875

IMPERIAL BANK OF CANADA

CAPITAL PAID UP \$7,000,000

RESERVE FUND \$7,000,000

PELEG HOWLAND, President

E. HAY, General Manager

The Bank offers a service of the highest order to Canadian manufacturers because of its 126 Branches located in important industrial and agricultural centres throughout Canada.

COLLECTIONS made at all points in Canada and in foreign centres.

DRAFTS—Money Orders and Letters of Credit issued, available throughout the world.

EXCHANGE—Domestic and Foreign Exchange bought and sold.

SAVINGS received at all Branches—interest credited half yearly at current rate.

Accounts of Merchants and Manufacturers solicited.

HEAD OFFICE - TORONTO

THE DOMINION BANK

HEAD OFFICE, TORONTO

Capital Paid Up - - \$6,000,000

Reserve Fund - - \$7,000,000

Sir Edmund B. Osler, President

C. A. Bogert, General Manager

W. D. Matthews, Vice-President

BANKING BUSINESS OF EVERY DESCRIPTION TRANSACTED

The Accounts of Manufacturers, Traders
and Others Carried on Favorable Terms

Commercial Letters of Credit Issued Available in Foreign Countries

London, England, Branch: 73 Cornhill, E.C.

Banking Service

The attention of manufacturers is drawn to the excellent facilities this Bank offers in all branches of a complete banking service.

A good banking connection is an essential to the success of the manufacturer or merchant.

THE CANADIAN BANK OF COMMERCE

BANK OF MONTREAL

Established 100 Years (1817-1917)

Capital Paid Up	-	-	\$16,000,000
Rest	-	-	16,000,000
Undivided Profits	-	-	1,784,979
Total Assets	-	-	\$426,322,096

BOARD OF DIRECTORS:

Sir Vincent Meredith, Bart., President	
Sir Charles Gordon, G.B.E., Vice-President	
R. B. Angus, Esq.	Major Herbert Molson, M.C.
Lord Shaughnessy, K.C.V.O.	Harold Kennedy, Esq.
C. R. Hosmer, Esq.	H. W. Beauchlerk, Esq.
H. R. Drummond, Esq.	G. B. Fraser, Esq.
D. Forbes Angus, Esq.	Colonel Henry Cockshutt
Wm. McMaster, Esq.	J. H. Ashdown, Esq.

Head Office: MONTREAL

General Manager, Sir Frederick Williams-Taylor

Branches and Agencies { Throughout Canada and Newfoundland
Also at London, England
And New York, Chicago and Spokane in the United States

A GENERAL BANKING BUSINESS TRANSACTED

BANK OF HAMILTON

HEAD OFFICE: HAMILTON



Capital Authorized	. . . . .	\$5,000,000
Capital Paid Up	. . . . .	3,000,000
Surplus	. . . . .	3,500,000

BOARD OF DIRECTORS

Sir John Hendrie, K.C.M.G., C.V.O., President	
Cyrus A. Birge, Vice-President	
C. C. Dalton	Robt. Hobson
W. E. Phin	I. Pitblado, K.C.
J. Turnbull	W. A. Wood

BRANCHES THROUGHOUT ONTARIO, THE NORTHWEST
AND BRITISH COLUMBIA

Correspondents in Great Britain—National Provincial and Union Bank of England, Limited

Correspondents in United States

New York—Hanover National Bank	Chicago—Continental and Commercial
Mechanics and Metals National Bank	National Bank
National City Bank	Cleveland—First National Bank
Philadelphia—First National Bank	St. Louis—National Bank of Commerce
Boston—National Shawmut Bank	Kansas City—Southwest National Bank
Buffalo—Marine National Bank	of Commerce
Pittsburg—Exchange National Bank	Minneapolis—Northwestern National Bank
Detroit—First and Old Detroit National Bank	Seattle—Bank of California
San Francisco—Crocker National Bank	

Collections effected in all parts of Canada promptly and cheaply

CORRESPONDENCE SOLICITED

SAVINGS DEPARTMENT AT ALL BRANCHES

J. P. BELL, General Manager

THE ROYAL BANK OF CANADA

Capital Authorized - - \$25,000,000 Reserve Funds (July 2) - \$15,000,000
 Capital Paid Up (July 2) - 14,000,000 Total Assets (July 2) - - 365,000,000

HEAD OFFICE, MONTREAL

BOARD OF DIRECTORS:

SIR HERBERT S. HOLT, President

E. F. B. JOHNSTON, K.C., 2nd Vice-President

E. L. PEASE, Vice-President

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 G. R. CROWE
 D. K. ELLIOTT
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 SIR MORTIMER B. DAVIS

G. H. DUGGAN
 C. C. BLACKADAR
 JOHN T. ROSS
 R. MacD. PATERSON

E. L. PEASE, Managing Director.
 F. J. SHERMAN, Asst. General Manager,

W. H. McWILLIAMS

C. E. NEILL, General Manager.
 M. W. WILSON, Supt. of Branches.

BRANCHES

462 in Canada and Newfoundland:

195 in Ontario and Quebec
 78 in Maritime Provinces
 142 in Central Western Provinces
 41 in British Columbia
 6 Branches in Newfoundland

56 Branches in West Indies, Central and South America:

43 in Cuba, Porto Rico, Dominican Republic, Costa Rica and Venezuela. Also Branches in Antigua, St. John's; Bahamas, Nassau; Barbados, Bridgetown and Speightstown; Dominica, Roseau; Grenada, St. George's; Jamaica, Kingston; Montserrat, Plymouth; Nevis, Charlestown; St. Kitt's, Basseterre; Tobago, Scarborough; Trinidad, Port of Spain and San Fernando; British Guiana, Georgetown, New Amsterdam and Rose Hall (Corentyne); British Honduras, Belize.

Statement to the Dominion Government

(Condensed)

Showing Condition of the Bank on May 31, 1918

LIABILITIES—

Capital Paid Up	\$ 12,911,700.00
Reserve Fund	14,000,000.00
Undivided Profits	564,264.53
Dividend No. 123, Payable June 1, 1918	387,351.00
Notes in Circulation	27,222,768.49
Deposits	280,749,695.61
Due to other Banks	5,536,301.79
Bills Payable (Acceptances by London Branch)	712,403.41
Acceptances under Letters of Credit	4,574,257.70
	<u>\$346,658,742.53</u>

ASSETS—

Cash on Hand and in Banks	\$ 61,374,462.32
Deposit in the Central Gold Reserves	15,000,000.00
Government and Municipal Securities	37,599,730.12
Railway and other Bonds, Debentures and Stocks	14,643,514.39
Call Loans in Canada	11,171,750.19
Call Loans elsewhere than in Canada	29,343,162.31
Deposit with Dominion Government for Security of Note Circulation	645,585.00
	<u>\$169,778,204.33</u>
Loans and Discounts	164,558,265.44
Liabilities of Customers under Letters of Credit as per contra	4,574,257.70
Bank Premises	6,713,312.09
Real Estate other than Bank Premises	1,034,702.97
	<u>\$346,658,742.53</u>

BARCELONA, SPAIN—Plaza de Cataluna 6

LONDON, ENGLAND

Bank Bldgs.,
 Princes Street, E.C.

**COLLECTIONS IN CANADA, CUBA, BRITISH WEST INDIES, ETC.
 HANDLED PROMPTLY ON FAVORABLE TERMS**

NEW YORK CITY

Cor. William and
 Cedar Streets

Travellers' Letters of Credit issued available in all parts of the world.

Drafts, Money Orders and Travellers' Cheques sold.

Savings Department at all Branches.

Cable Address, "Therson," Toronto

Telephone Main 2862

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BARRISTERS, SOLICITORS, etc.

D. E. THOMSON, K.C.

STRACHAN JOHNSTON, K.C.

W. N. TILLEY, K.C.

ARTHUR J. THOMSON

R. H. PARMENTER

SOLICITORS FOR THE CANADIAN MANUFACTURERS' ASSOCIATION

Offices—Toronto General Trusts Building
 85 Bay Street

TORONTO
 Canada

THE MERCHANTS BANK OF CANADA

Statement of Liabilities and Assets at 30th April, 1918

LIABILITIES

1. To the Shareholders

Capital Stock paid in	\$7,000,000 00
Rest or Reserve Fund	7,000,000 00
Dividends declared and unpaid	176,900 00
Balance of Profits as per Profit and Loss Account submitted herewith	437,973 92
	<u>\$14,614,873 92</u>

2. To the Public

Notes of the Bank in Circulation	\$12,327,168 00
Deposits not bearing interest	34,886,747 83
Deposits bearing interest (including interest accrued to date of statement)	75,946,985 48
Balances due to other Banks in Canada	1,400,941 75
Balances due to Banks and banking correspondents in the United Kingdom and foreign countries	1,161,976 79
Bills payable	598,851 20
Acceptances under letters of credit .....	.....
Liabilities not included in the foregoing .....	.....
	<u>\$140,937,544 97</u>

ASSETS

Current Coin	\$4,890,061 36
Deposit in the Central Gold Reserves	6,000,000 00
Dominion Notes	5,912,092 50
Notes of other Banks	893,076 00
Cheques on other Banks	5,311,786 12
Balances due by other Banks in Canada	4,704 37
Balances due by Banks and banking correspondents in the United Kingdom	82,580 53
Balances due by Banks and Banking correspondents elsewhere than in Canada and the United Kingdom	1,357,843 03
Dominion and Provincial Government securities, not exceeding market value	5,435,464 66
Railway and other Bonds, Debentures and Stocks, not exceeding market value	4,060,204 70
Canadian Municipal securities, and British, Foreign and Colonial public securities other than Canadian	14,589,065 54
Call Loans in Canada on Bonds, Debentures and Stocks	5,223,953 88
Call Loans elsewhere than in Canada	3,906,648 93
	<u>\$57,667,481 62</u>
Current Loans and Discounts in Canada (less Rebate of Interest)	76,194,016 15
Current Loans and Discounts elsewhere than in Canada (less Rebate of Interest)	339,987 29
Liabilities of customers under letters of credit as per contra	598,851 20
Real Estate other than bank premises	312,928 11
Overdue debts, estimated loss provided for	272,226 60
Bank Premises, at not more than cost, less amounts written off	4,886,438 98
Deposit with the Minister for the purposes of the Circulation Fund	355,000 00
Other Assets not included in the foregoing	310,615 02
	<u>\$140,937,544 97</u>

K. W. BLACKWELL,
Vice-President.

E. F. HEBDEN,
Managing Director.

D. C. MACAROW,
General Manager.

Report of the Auditors to the Shareholders of The Merchants Bank of Canada

In accordance with the provisions of sub-Sections 19 and 20 of Section 56 of the Bank Act, we report to the Shareholders as follows:—

We have examined the above Balance Sheet with the Books of Account and other records at the Chief Office of the Bank and with the signed returns from the Branches and Agencies, and have checked the cash and verified the securities of the Bank at the Chief Office against the entries in regard thereto in the books of the Bank at 30th April, 1918, and at a different time during the year and found them to agree with such entries. We also attended at some of the Branches during the year and checked the cash and verified the securities held at the dates of our attendances and found them to agree with the entries in regard thereto in the books of the Bank.

We have obtained all the information and explanations we have required. In our opinion the transactions of the Bank which have come under our notice have been within the powers of the Bank, and the above balance sheet is properly drawn up so as to exhibit a true and correct view of the state of the Bank's affairs, according to the best of our information and the explanations given to us, and as shown by the books of the Bank.

VIVIAN HARCOURT, }
GORDON TANSLEY, } Auditors.

(of the firm of Deloitte, Plender, Griffiths & Co.).

Montreal, 23rd May, 1918.

GILLIES BROS., Limited

LUMBER MANUFACTURERS

WHITE PINE

RED PINE

SPRUCE

GUY E. ROBINSON,
Sales Agent,
Aeolian Building, 42nd Street West,
New York City
Established 1873

Mill and Head Office:
BRAESIDE, ONT.

Vera Chemical Company of Canada, Ltd.

NORTH MILWAUKEE, WIS.

BURLINGTON, ONT., CANADA

STONEHAM, MASS.

We specialize in Rosin Sizings for Paper Mills

VERA PAPER SIZE

VERA MILL SIZE

VERA BEATER SIZE

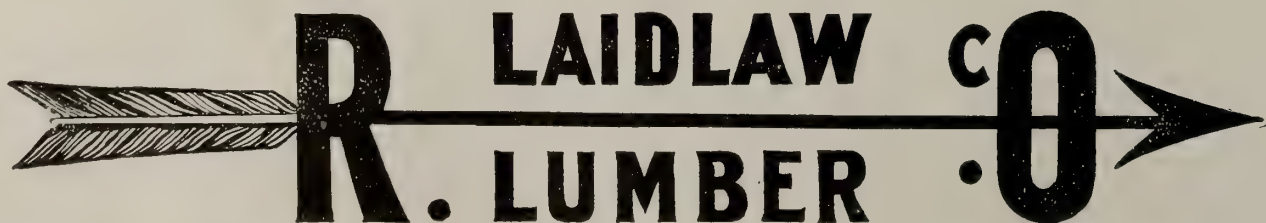
or any size made to order to suit conditions at Mills:

SHIPPED IN BARRELS
AND IN TANK CARS

Also
Manufacturers
of

{ Vera Soap Powder for Washing Felts, Etc.
{ Vera Boiler Compound

FOUNDED 1871



SARNIA

TORONTO

BUFFALO, N.Y.

65 Yonge Street

Cable Address : "Timber"

Established 1865

Post Office Drawer 500

The British Columbia Mills, Timber & Trading Company

Head Office - Vancouver, B.C.

Branches : Hastings Saw Mill, Vancouver. Moodyville Saw Mill, Burrard Inlet
Sales Office for Northwest : 603 McIntyre Block, Winnipeg, Manitoba

MANUFACTURERS AND SHIPPERS BY RAIL AND WATER OF

Fir, Cedar
Spruce
and
Hemlock
Lumber



Lath
Pickets
Shingles
Mouldings
Etc.

Loading timbers at the Hastings mill wharves, the large proportion of them being from 65 to 110 feet long, and from 12 x 12 to 24 x 24 inches square. Cargo over 4,000,000 feet board measure. As far as is known this is the largest cargo on any one vessel cut and loaded by any one mill on the Pacific Coast.

**Rail Shipments to All Parts of Canada
Spars and Long Timbers a Specialty**

For over Fifty Years **THE HASTINGS SAW MILL** has been Manufacturing and Shipping Cargoes to U.K., South Africa, Australia, South America, China, Japan and other foreign countries.

ENQUIRIES SOLICITED
OUR TRADE-MARK H. S. M. IS A GUARANTEE OF GRADE
VESSELS CHARTERED

PROMPT DELIVERY
TIMBER LANDS FOR SALE

Codes Used : A 1, A B C, Watkins, Telecode, Western Union

BATHURST LUMBER CO. LIMITED



Kraft Pulp, 65 tons per day

Unbleached Sulphite Pulp, 50 tons per day

Spruce Lumber, Band Sawn

White Pine Lumber, Band Sawn

Complete Planing and Resaw Mill

Timber Limits, 1,500 Square Miles



BATHURST, N.B.

. .

CANADA

Mason, Gordon & Co.

WHOLESALE

TIMBER, LUMBER, SHINGLES

We Specialize in :

British Columbia Dimension and Ship Timbers
British Columbia Interior Finish, Flooring and Mouldings
British Columbia Cedar Finish and Shingles
Oregon Fir, Spars and Ship Timbers
White Oak Dimension Timbers
Long and Short Leaf Yellow Pine Timber and Lumber

PILING

Yellow Pine, Norway and Spruce
High-Class Fir Doors, Finish, Turned Posts, etc.

CEDAR POLES

(All sizes, both creosoted and natural)

We are Sole Representatives for

Quebec and the Maritime Provinces

FOR

THE BRITISH COLUMBIA MILLS TIMBER & TRADING CO.

VANCOUVER, B.C.

(B.C. Fir, Finish and Lumber)

AND

THE THURSTON-FLAVELLE LUMBER CO.

PORT MOODY, B.C.

(High-Grade Cedar Finish and Mouldings)

Send your inquiries by mail, telegraph or telephone.

No Trouble to Quote Prices

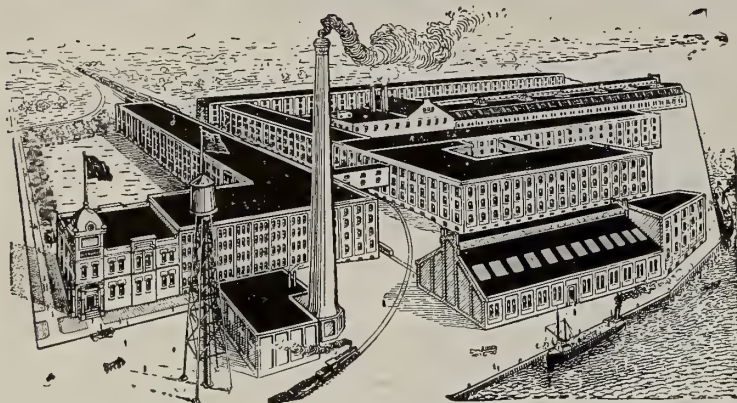
HEAD OFFICE

80 St. Francois Xavier Street - MONTREAL, QUE.

BRANCH OFFICES :

510 Lumsden Building
TORONTO, ONT.

304 Pacific Building
VANCOUVER, B.C.



Frost & Wood MACHINERY

Since 1839—almost 80 years—Frost & Wood Farm Implements and Machinery have been used by Canadian Farmers. During these years many changes have taken place in the types of machines furnished, but throughout the whole period the Frost & Wood standard of Quality has been maintained—and improved upon when that was possible.

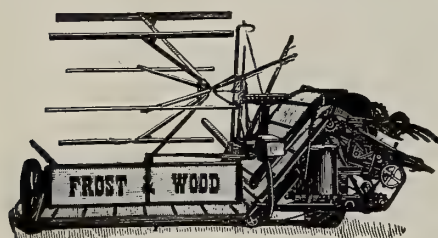
Grain Binders
Corn Binders
Reapers

Mowers
Rakes
Hay Loaders

Disc Harrows
Drag Harrows
Spring Tooth Cultivators
Etc., Etc.

Stiff Tooth Cultivators
Broadcast Seeders
Land Rollers

Frost & Wood Agents control a full line of Farm Implements and Equipment. Ask for catalog describing it in detail.

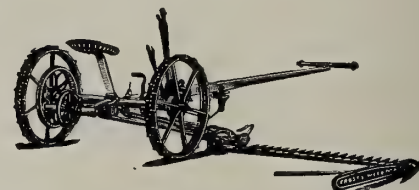


The Frost & Wood Co., Limited

Smith's Falls, Ontario, Canada

Branches at MONTREAL, ST. JOHN, TRURO and
CHARLOTTETOWN

Sold in Western Ontario and Western Canada by
COCKSHUTT PLOW CO., LIMITED
Brantford, Winnipeg, Regina, Calgary and Saskatoon



MASSEY - HARRIS

High-Grade Farm Implements

Grain Binders, Reapers, Corn Harvesters, Mowers, Rakes, Side Delivery Rakes, Tedders, Hay Loaders, Cultivators, Seeders, Hoe Drills, Shoe Drills, Disc Drills, Fertilizer Drills, Fertilizer Sowers, Disc Harrows, Drag Harrows, Harrow Carts, Feed Cutters, Pulpers, Ensilage Cutters, Manure Spreaders, Cream Separators, Plows, Scufflers, Land Rollers, Packers, Wagons, Sleighs, Dump Carts, Gasoline Engines, Grain Grinders, Saw Outfits, Sprayers, Tractors, etc.

MASSEY-HARRIS CO., LTD.

Head
Offices:
Toronto
Canada

Montreal
Swift Current

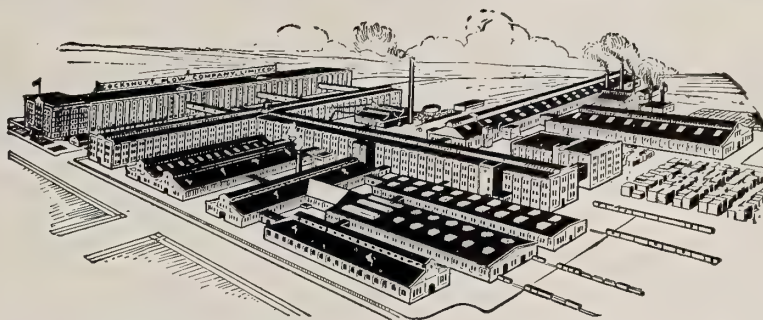
Moncton

Branches at
Winnipeg
Yorkton
Agencies Everywhere

Regina
Calgary

Saskatoon
Edmonton

Factories at
Toronto
Brantford
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COCKSHUTT IMPLEMENTS

Wherever farming is carried on there you will find Cockshutt Implements at work. There are sizes and types of Cockshutt Plows, Harrows, Drills, Seeders, etc., to suit any condition of soil or size of farm that can be encountered—and each the best that long experience, good materials and high-grade workmanship can make it.

TRACTOR PLOWS
HORSE PLOWS
DISC HARROWS

DRAG HARROWS
DRILLS
CORN PLANTERS

CULTIVATORS
SCUFFLERS
POTATO DIGGERS

MANURE SPREADERS
PULPERS
PULVERIZERS

Etc., Etc.

Ask the nearest Cockshutt Agent for particulars regarding any line in which you are interested or write us.



Cockshutt Plow Co., Limited

BRANTFORD, CANADA

BRANCHES AT

Winnipeg, Regina, Calgary, Saskatoon

Sold in Eastern Ontario and Maritime Provinces by

THE FROST & WOOD CO., Limited

Smith's Falls, Ont. Montreal, Que. St. John, N.B.

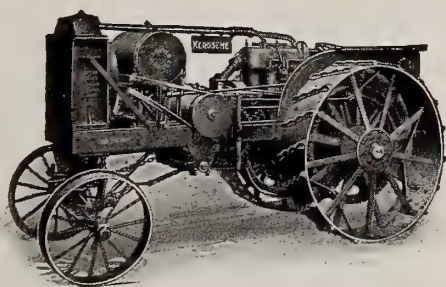


1836

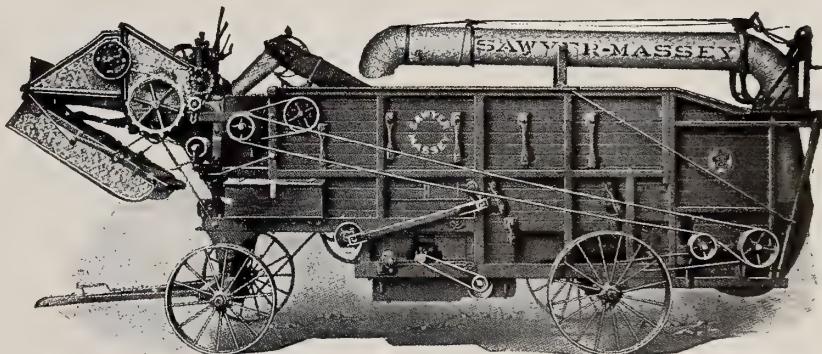
1918

EIGHTY-TWO YEARS' EXPERIENCE

IN MANUFACTURING FOR THE CANADIAN AND FOREIGN TRADE



SAWYER-MASSEY GAS-OIL TRACTORS in 11-22, 17-34, 20-40 and 27-50 sizes. All designed after their **GOLD MEDAL LINE**, Four Cylinder Vertical Motors.



SAWYER-MASSEY SEPARATORS No. 1 and No. 2—22 in. Cylinder, 36 in. Body, and 28 in. Cylinder, 44 in. Body, shown complete with Feeder and Wind Stacker. **NOTE** neat appearance and few belts.

If Interested Consult

SAWYER-MASSEY CO., Limited

for Oil and Steam Tractors, Threshing Machinery, or Road Machinery

HEAD OFFICE :
Hamilton, Canada.

BRANCHES : Winnipeg, Man.; Regina, Sask.; Saskatoon, Sask.;
Calgary, Alta. **AGENCY :** Buenos Aires.

WELLAND VALE TOOLS

Are the Standard—Always the Same—Uniform Quality—Nothing Better

MAKERS OF

**AXES, HOES, PICKS, SAWS, RAKES
MATTOCKS, AGRICULTURAL
FORKS, SCYTHES, GRUB HOES
AND CROWBARS**

Apply for Catalogue. Special Attention to Export Orders

The Welland Vale Manufacturing Co., Limited
ST. CATHARINES, CANADA

More Farm Power Machines

Not for many years has the civilized world realized so keenly as now the vital place occupied in our food supply system by the small grains, especially wheat. Never before in the history of the world was it so important to the well-being of so many people that wheat be grown in quantity and of the highest quality. Canada, as always, is doing her share and more. Every available acre is planted. More acres cannot be planted, nor production increased over the present supply, without more help, or more power, or a greater quantity of labor-saving machines on Canadian farms. More help is out of the question. The burden must be borne by increased power and more machines to be drawn or driven by that power.

Much of the needed power, especially for the raising, harvesting and threshing of small grains, can be furnished by the light kerosene tractor which, operating efficiently on low-priced fuel,

supplies almost ideal power for plowing, disking, seeding, harvesting and threshing, at such low cost that every grain-growing farmer can profit by its use and extend the scope of his activities. The kerosene tractor, properly sold in combination with the machines necessary for power farming, will make it possible for Canadian farmers to increase wonderfully the productiveness of each farm worker, and to increase, without additional man power, the number of acres under cultivation and the production from those acres.

We are doing all we can to produce and distribute economically all these much-needed machines. Our lines of tractors, plows, disks, harrows, drills, mowers, reapers, binders and threshers are all time-tried and tested on Canadian fields. Every facility of our factories and distributing organization is at the service of Canadian farmers.

INTERNATIONAL HARVESTER COMPANY OF CANADA, Limited

BRANCH HOUSES

WEST—Brandon, Man. ; Calgary, Alta. ; Edmonton, Alta. ; Estevan, Sask. ; Lethbridge, Alta. ; N. Battleford, Sask. ; Regina, Sask. ;
Saskatoon, Sask. ; Winnipeg, Man. ; Yorkton, Sask.

EAST—Hamilton, Ont. ; London, Ont. ; Montreal, Que. ; Ottawa, Ont. ; Quebec, Que. ; St. John, N.B.

JOHN MORROW SCREW AND NUT CO.

LIMITED

INGERSOLL

CANADA

MANUFACTURERS OF HIGH-GRADE

CAP SCREWS SET SCREWS
NUTS (Every Variety of Finish)
TWIST DRILLS, ETC.

Prompt Delivery of Set Screws and Cap Screws

We are again increasing Plant No. 3 where our Twist Drills, Reamers, etc., are manufactured, and hope soon to be able to give prompt delivery on this product

PLEASE SEND US YOUR SPECIFICATIONS

WE ARE SPECIALISTS

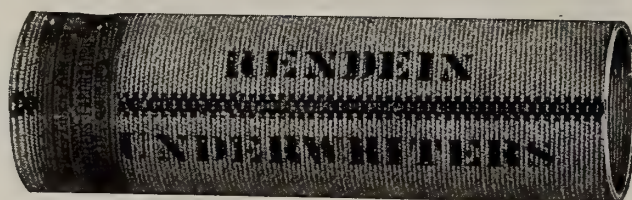
in the Manufacture of

SHEET METAL STAMPINGS
PRESSED STEEL PARTS
STAMPED AND SPUN BRASS GOODS

Send Us Your Specifications To-day

W. H. Banfield & Sons, Limited

370-386 Pape Ave., Toronto, Canada



"RENDEIN UNDERWRITERS" LINEN HOSE

Made and labelled strictly in accordance with the requirements and specification of the Associated Factory Mutual Fire Insurance Companies, and the National Fire Protection Association, as an Unlined Linen Fire Hose for inside fire protection.

"MOUNT ROYAL" LINEN HOSE Made in any length and capable of withstanding any pressure up to 400 pounds.

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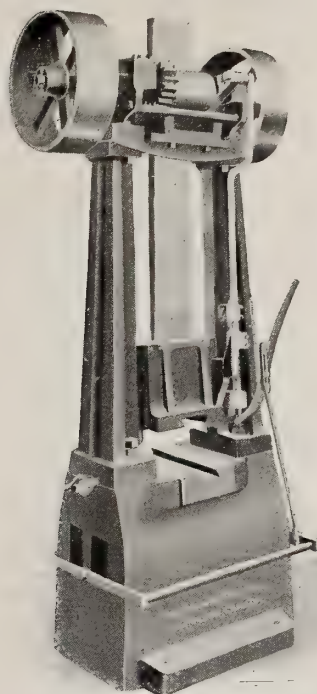


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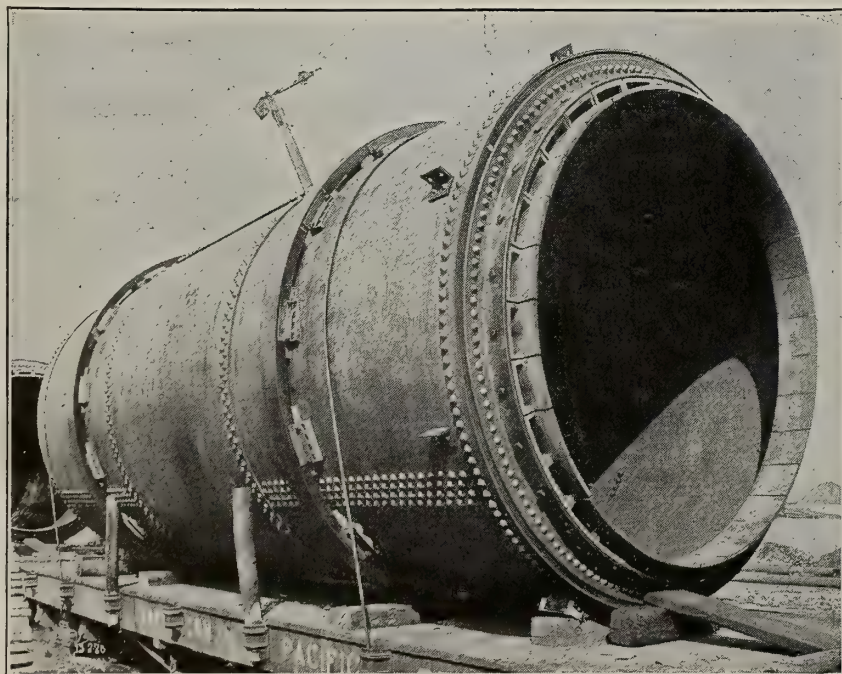
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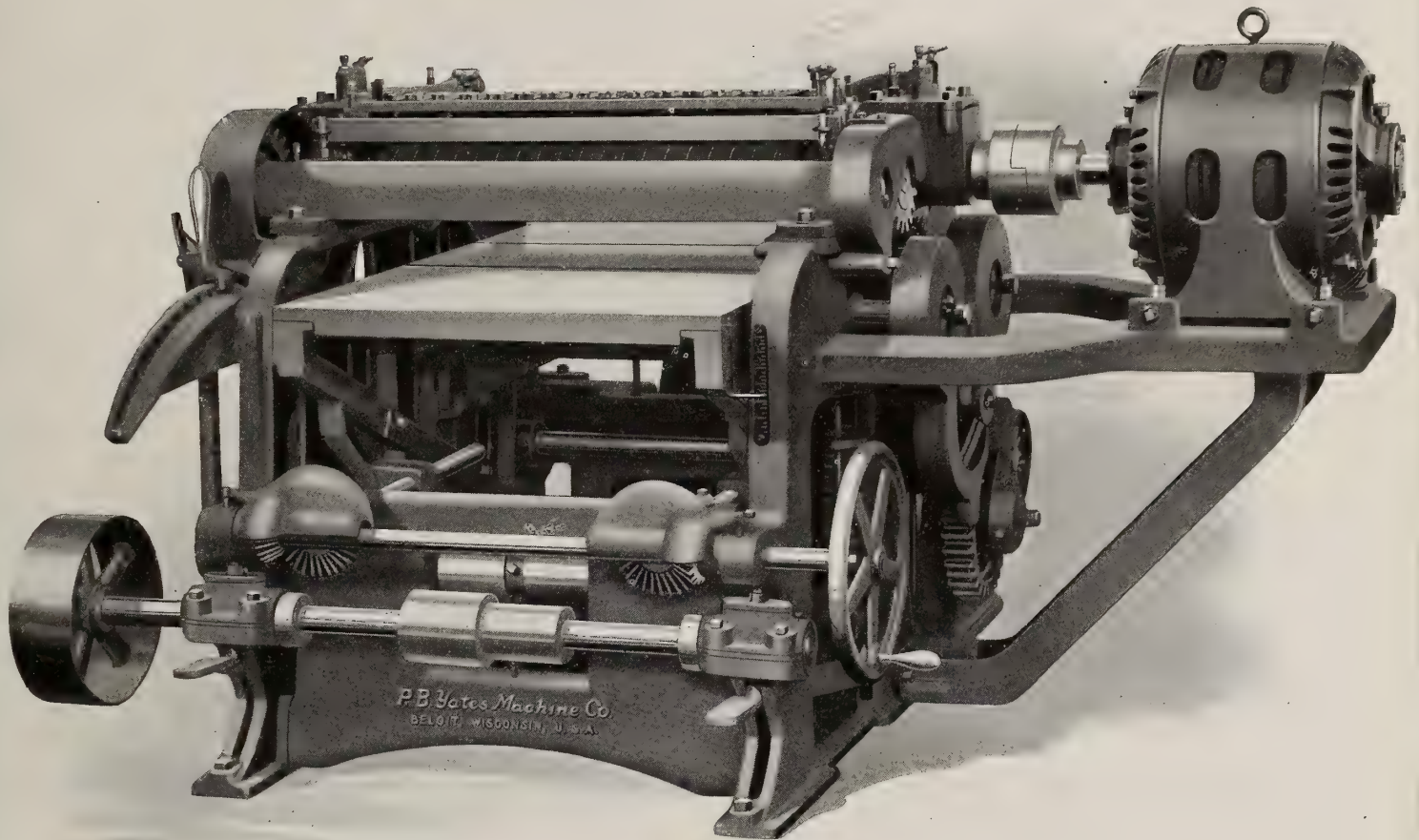
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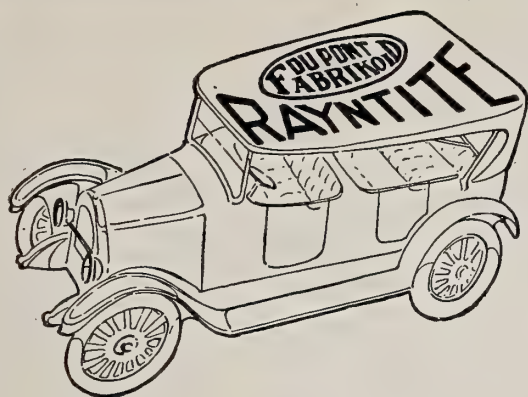
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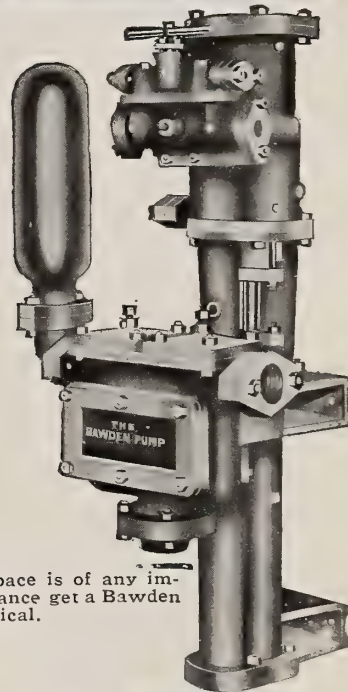
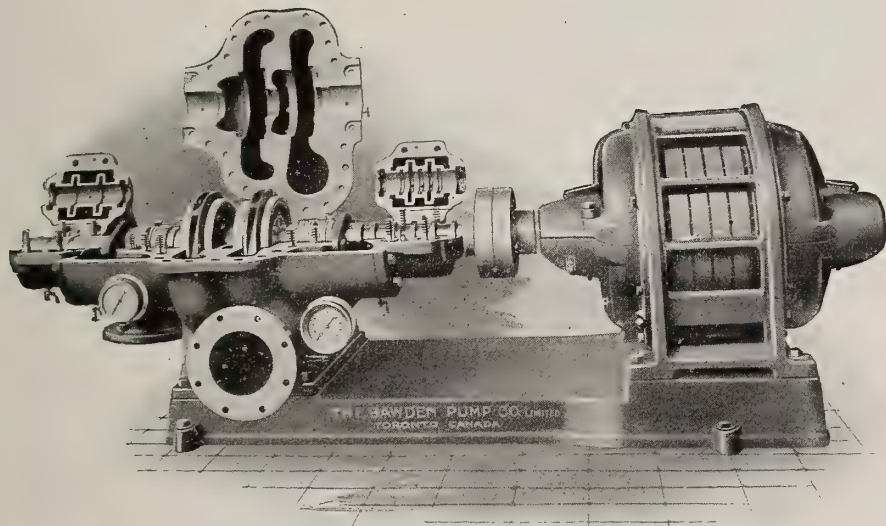
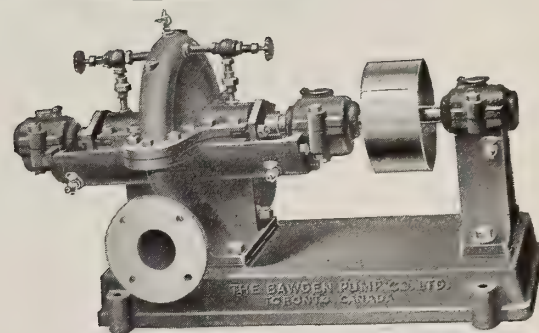
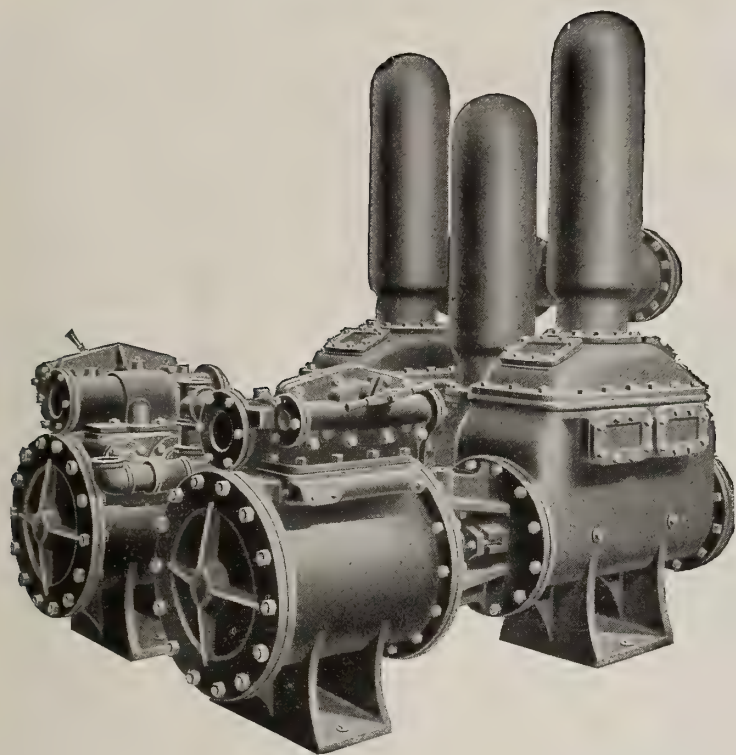
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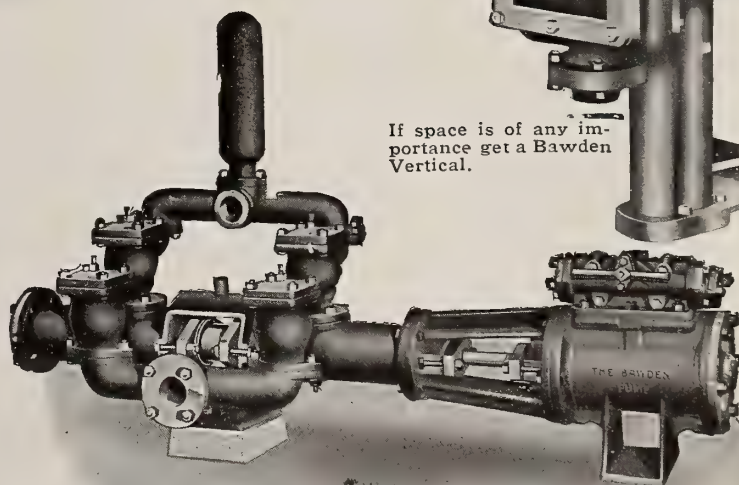
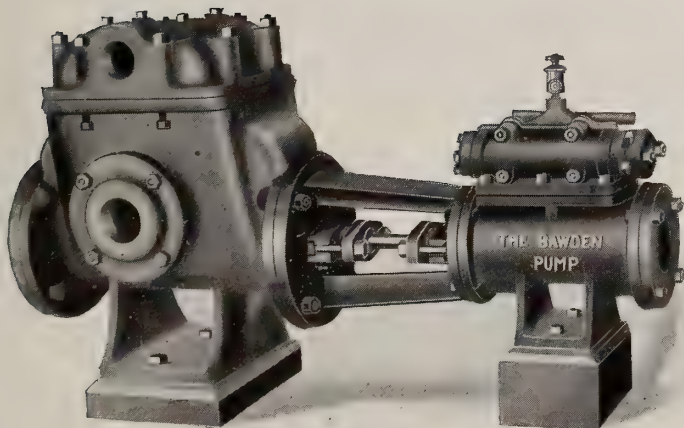
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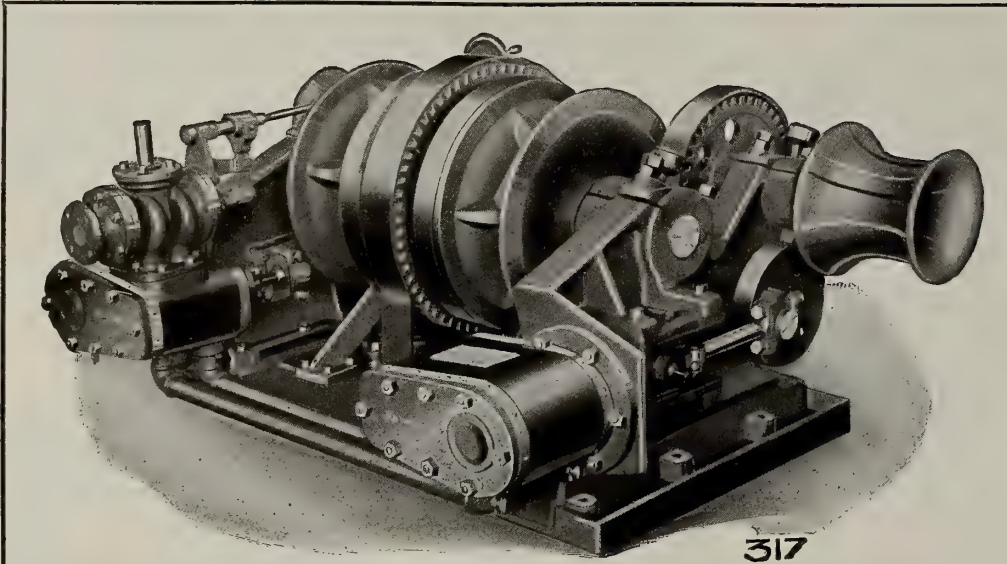
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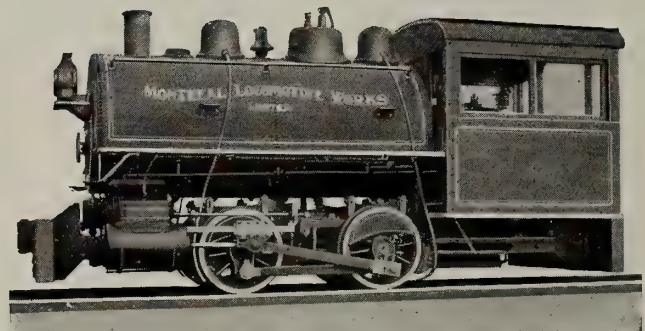
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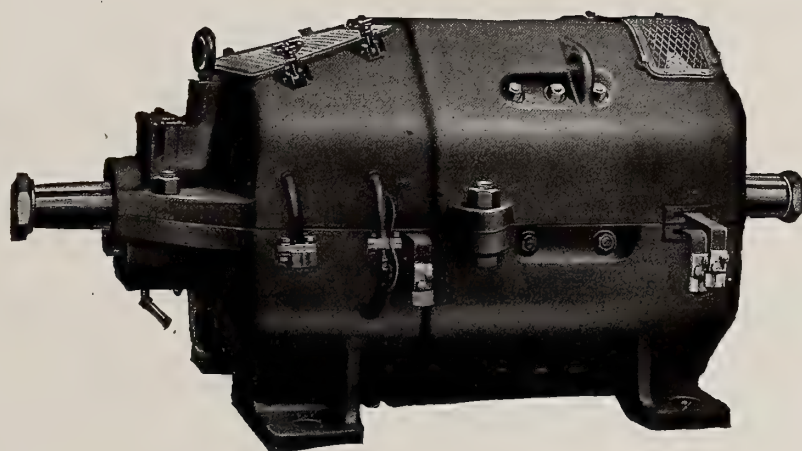
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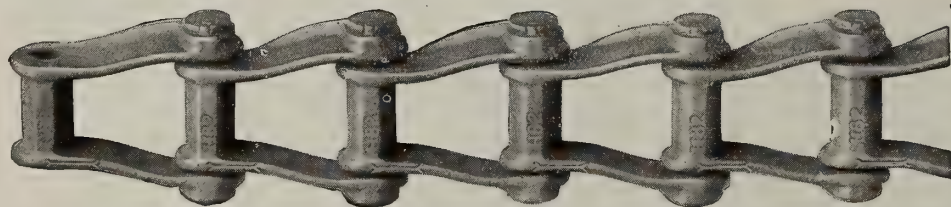


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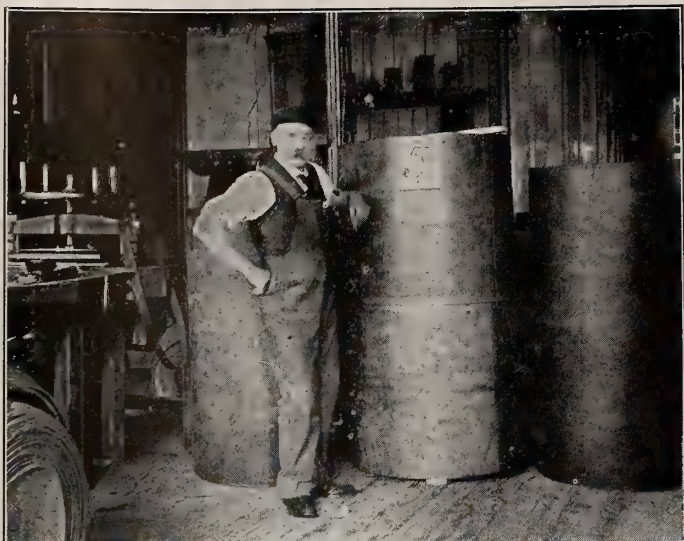


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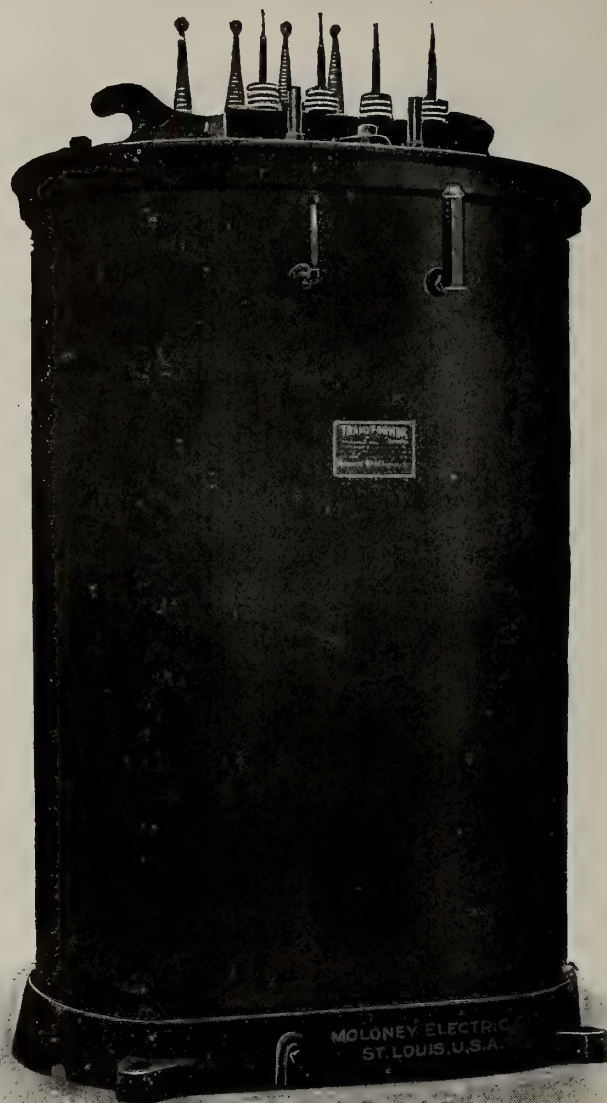


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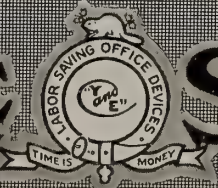
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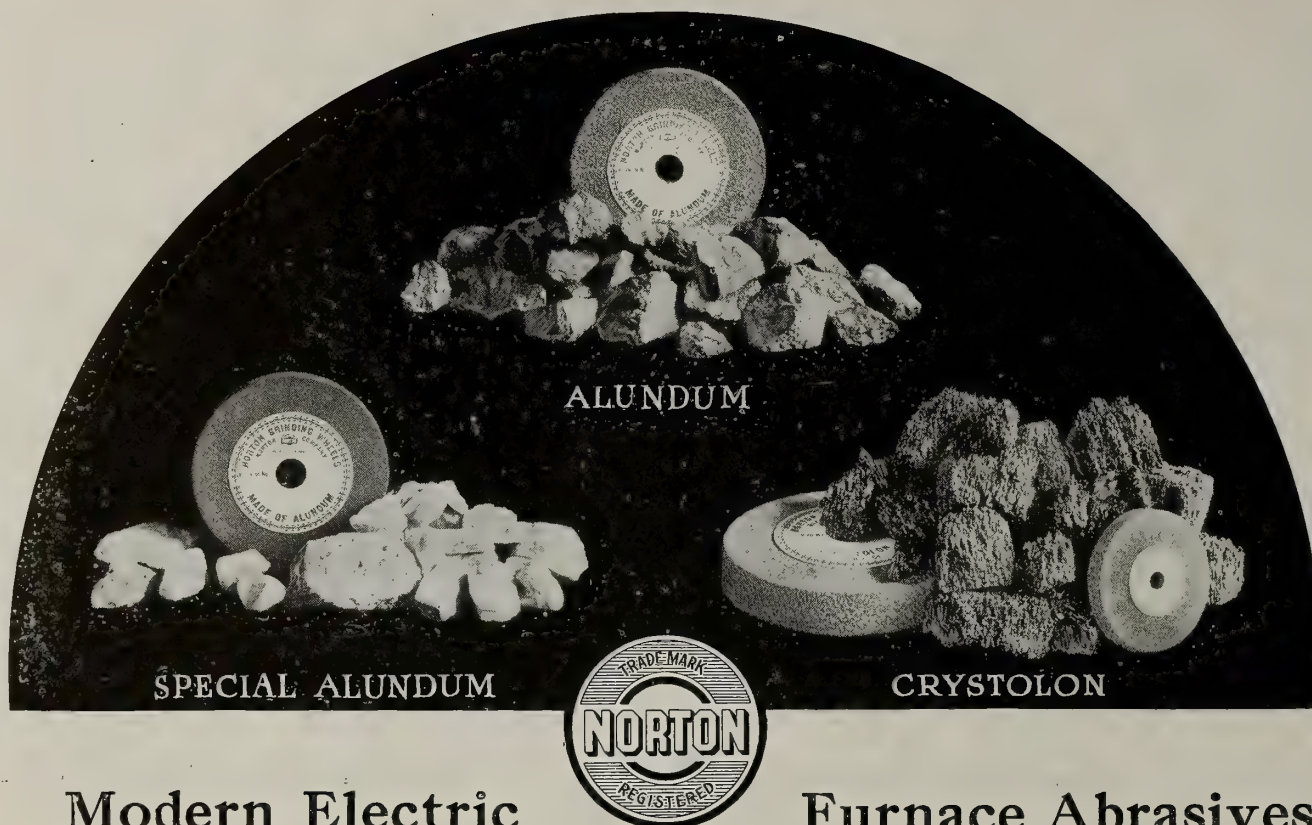
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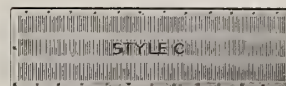
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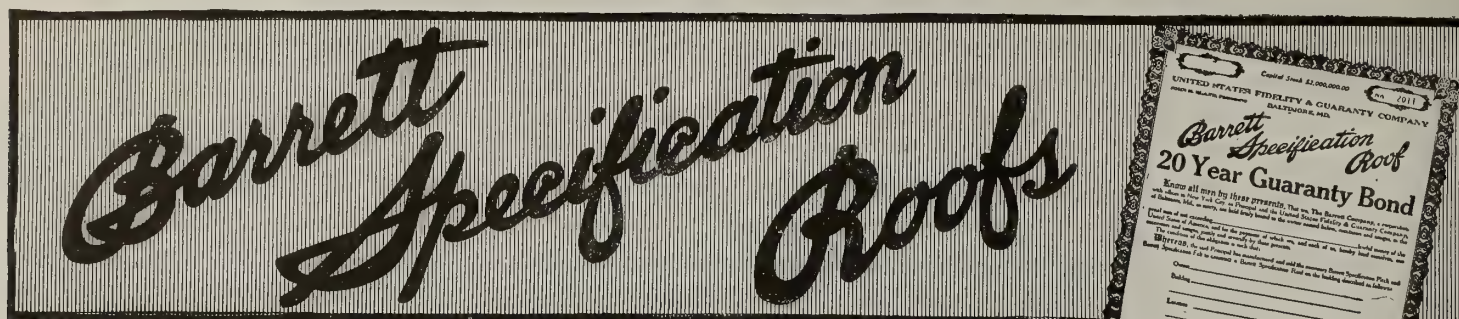
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Canada

THE following illustrates the working of our plan which guarantees Barrett Specification Roofs for twenty years :

When the question of roofing is reached in the specifications covering the building the following, or its equivalent, should be inserted in the building plans :

"This roof shall be laid according to The Barrett Specification dated May 1, 1916, and the roofing contractor shall upon completion of the job deliver to us the Barrett 20-year Guaranty Bond, in accordance with Note 1 of such Specification."

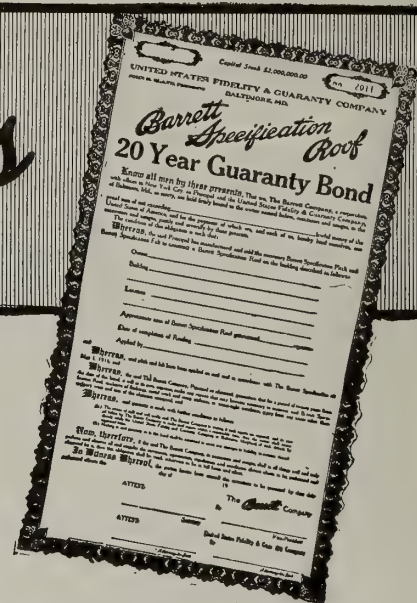
Competitive bids may then be asked for from a number of roofing contractors.

The concern to which the job is finally awarded promptly notifies us regarding the work, asks for our Inspection Service, and the 20-Year Bond.

Our inspectors supervise the job, see that the Specification is strictly followed both as to methods and materials, and on its completion certify that the roof is O.K. in every respect.

On this certification the Guaranty Company issues a 20-Year Surety Bond which *exempts the owner from any maintenance or repair expense to the roof until 1937.*

The Guaranty Bond costs the owner and the roofing contractor nothing.



**This is the Bond that
guarantees your roof
for twenty years.**

The service is free in the interest of good workmanship and the good repute of our materials.

This new Guaranty Bond is issued on all Barrett Specification Roofs of fifty squares or more in all towns of 25,000 population and over, and in smaller centers where our Inspection Service is available.

Our only requirements are that the roofing contractors shall be approved by us and that The Barrett Specification dated May 1, 1916, shall be strictly followed.

If you are interested we should be very glad to send you further details or copy of The Barrett 20-Year Specification, with diagrams, ready for insertion in your building plans.



The **Barrett** Company
LIMITED

MONTREAL TORONTO WINNIPEG VANCOUVER
ST. JOHN, N.B. HALIFAX, N.S. SYDNEY, N.S.

Barrett Specification Roof on St. Denis Substation, Montreal Tramways Co., Montreal.

Gen. Contractors: Laurin & Leitch, Engineering and Construction Co., Limited, Montreal. Roofers: Geo. W. Reed & Co., Limited.

INDUSTRIAL CANADA

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INCORPORATED.

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Giving Canadians a Bad Reputation.

PRACTICALLY every business man must have experienced at some time or other the irritation, if not the actual pecuniary loss, of not receiving a reply to urgent correspondence. Exasperating indeed is the failure of correspondents to observe even the ordinary courtesies in the matter and at least make some acknowledgment of the receipt of letters. This, we say, is a matter of common, every-day experience, shared in by all.

How astonishing, therefore, that any man or firm, who knows what it feels like to have his business correspondence ignored by others, should himself be guilty of such a practice! Yet that is the lamentable part of it. We are often inclined to blame the other fellow for delinquencies of which we are secretly guilty ourselves.

Among ourselves, perhaps, the injury done by this negligence is not of vital importance. When it comes, however, to our relations with the business institutions of other countries, the situation becomes much more serious. And, unfortunately, it is just here that some people seem most inclined to be careless. Evidently they reckon that if a correspondent is in South America or on the other side of the Atlantic, he is too far away to worry about.

Writing from Ottawa to the General Secretary, Mr. Theo. H. Wardleworth, of the Imperial Munitions Board, refers to the very general complaint about the shortcomings of Canadian manufacturers in this matter.

"One of the things that we must practise as a settled part of our business policy is the prompt response to letters from foreign correspondents," urges Mr. Wardleworth, "otherwise, we shall acquire a reputation anything but enviable in this respect, with the corresponding loss of business. It is a matter which should be brought very clearly before the attention of our members, and I am urged to press the matter again by the receipt of a letter from ——."

The letter referred to is from a European city and deals with a certain metal produced in Canada. Some correspondence took place with a Canadian firm, but this was terminated by the failure of the latter to answer certain specific questions contained in a letter from the European correspondent. This man then wrote, "Generally speaking we over here find it almost impossible to do business with Canada on account of the Canadian firms not attending to our inquiries . . . I am sorry to have this grouch against your firms, but I believe I am not the only one who has to complain."

For the sake of Canada's good name, for the sake of that export business which it is so important for us to develop, do not allow foreign letters to go unanswered. Even if you don't wish to engage in export trade or are unable to carry out suggested arrangements, at least have the decency to say so, politely and cordially. Let Canadian manufacturers at least have the reputation for courtesy.

Organized Labor in Canada.

FROM a membership of 133,132 in 1911, trade unions in Canada have grown to possess a membership of 204,630 at the end of 1917, according to figures presented in the seventh annual report on labor organization in Canada, as compiled by the Department of Labor. In all there are 1,974 local branch unions in Canada, 1,702 comprising 164,896 members, being affiliated with international organizations; 244, with 32,343 members, being connected with non-international bodies; and 28, having 7,391 members, being independent units. There was a gain of 76 international local branches and 35,773 members during

1917; non-international bodies had an increase of 55 branches and 9,459 members and the independent units had an addition of one, but the reported membership was less by 1,009. Of the 1,974 local trade union branches in Canada 944 are located in 21 cities, and 644 reported a membership of 85,527, representing approximately 42 per cent. of the entire trade union membership of the Dominion. Montreal, with 123, has the largest number of local branches in any city, and 75 of them reported 15,914 members; Toronto comes second with 118 branches, 76 of which reported 15,546 members.

A statement indicates the extent to which the trade unionists of the Dominion have voluntarily contributed to the Canadian expeditionary forces since the outbreak of the war in August, 1914. Enlistment of one or more members has been reported by 1,333 local branch unions, the recruits numbering 26,438 and reservists 692, a total of 27,130 trade unionists in the ranks. The province of Ontario supplied 9,807 of the total of 26,438 recruits and 297 reservists out of 692, about 37 per cent. of the enlistments, the City of Toronto furnishing 4,444. There were 43 other localities in the province which had not fewer than 25 enlistments to their credit. British Columbia supplied 3,466 recruits and 155 reservists, the City of Vancouver contributing 1,681 of the former and 93 of the last named.

The other provinces rank in the following order: Alberta, 3,240 enlistments, the City of Calgary supplying 1,066; Manitoba, 2,534, Winnipeg supplying 2,132; Quebec, 2,522, Montreal supplying 1,775; Nova Scotia, 2,348. the coal fields of Cape Breton supplying 1,100; Saskatchewan, 1,084, Regina supplying 355; New Brunswick, 998, St. John supplying 787; Prince Edward Island, 66, all of which were reported from Charlottetown.

Adopts Commonsense View.

A COMMONSENSE attitude is taken by the Smith's Falls News, when in the course of an editorial on "Buy Made-in-Canada Goods," it points out that the adoption of such a policy is not advocated on behalf of the manufacturers, but for the national benefit. In their antagonism of the manufacturers, and their hostility to any policy looking towards the development of home industries the free traders are blinding themselves to the serious effects on Canada as a nation of hindering the expansion of manufacturing.

"Buy Made-in-Canada Goods should be the slogan of the Dominion from Atlantic to Pacific," says the Smith's Falls paper, and to buy Canadian goods in preference to those imported from the United States or, if they are not obtainable, to buy substitutes or do without them is the patriotic duty of the hour. Canada has a peculiar financial puzzle, due to war conditions, to solve, and the task of the Minister of Finance and our other financiers will be considerably lightened if they have the assistance of the people. This is not a plea on behalf of the Canadian

manufacturers, although such a plea would not be out of place but for the national benefit. The restriction of imports was the first step made necessary by the alarming increase in the balance of trade in favor of the United States, due to the preponderance of imports over exports. Canada is not on the verge of bankruptcy, but rather in the position of a very wealthy man who cannot put his hand on sufficient cold cash to meet present obligations. Our export business has been increasing by leaps and bounds in the last few years, but it has largely been to Britain, and she cannot make immediate payment of her huge debts to Canada. Britain owes Canada more than double what Canada owes the United States, but we can't collect from the motherland now to pay what we owe our cousins to the south. The balance of trade must be reduced as much as possible or prevented from growing larger, and the only way is to cut down imports, for at present there is not much chance, unless heavy military orders are secured from the United States to increase exportations to that country. Just remember then when you are buying anything to ask for the 'Made-in-Canada' article and you will know that you are helping the Dominion over a financial difficulty as well as helping to build up Canadian industries. And after all the 'Made-in-Canada' article will be found as good as the best 'imported.' We recall some verses written some years ago by the late Pauline Johnston, the famous 'Made-in-Canada' poetess, which might have been written for the present moment:

We don't need the marts of Europe, nor the trade of the eastern isles.
We don't need the Yankee's corn and wine, nor the Asiatic's smiles,
For what so good as our home-made cloth, and under the wide blue dome,
Will you tell me where you have tasted bread like the bread that is baked at home?

And we are the young and strong, and who so fit for the fight as we?
With our hands of steel and our iron heel and our hearts like the oaken tree.
For we are the home-bred, home-fed men, the pride of a princely land,
And the things that are made in Canada are the things that her sons demand."

Read the Reports and Addresses

THE present issue of INDUSTRIAL CANADA has been compiled with a view to giving the large section of the membership of the Association who were unable to be present at the annual meeting an opportunity to obtain a complete idea of what took place. As the reports and addresses at this year's convention were of unusual importance, it behooves each member, who desires to derive advantage from membership in the Association, to read through this number very carefully, taking special note of those matters bearing on his own particular branch of industry.

The Call for Greater Food Production

By ERNEST B. ROBERTS

Canada Food Board, Ottawa

FOR the third season Canadian employers, large and small, are asked to release men for farm work. The demand is growing in its intensity every successive season. That is natural. The war is growing in intensity; the national effort is growing, and must continue to grow until the end, not yet in sight.

So it comes that no new reason can be assigned for employers enabling their men to go out on the farms for a part of the next ten vital weeks, encouraging them, even prodding the backward ones. No new reason, it is true, but a very much emphasized old reason—the war, and again, the war. More and more the Allied nations are depending upon Canada and the United States for their food. Someone among employers may ask, “Why are they more dependent?” Because the number of men in the Allied nations in Europe taken for active combatant service is continually growing. France has drained her fields and factories again and again; Italy, under the fearful menace of another Austrian drive, and mindful of the disaster of last October, when the foe claimed 200,000 prisoners, from these who were the flower of Italian life, has more men than ever in the fighting line. Great Britain has raised her compulsory military age to fifty. That means that men born in the very year when our fathers were celebrating the passing through the British Imperial Houses of Parliament of the B.N.A. which confederated Canada and made it what it is to-day, are now, if physically fit, liable to serve in the front line for the defence of Canada and the rest of the Empire! It is a pretty heavy tax on men for only being nearer the centre of the Empire, whose benefits, whatever they may think of its responsibilities, are shared equally.

Then, since the first call of our Canadian farmers two years ago, two of the agricultural countries of the Entente have dropped out. Roumania and Russia, both among the chief contributors to the European wheat trade, are beyond our reach, perhaps beyond our hope. Indeed, their supplies of cereals may soon be diverted into the depleted granaries of the foe. More and more, Great Britain, France and Italy must depend on what Canadian farmers can produce for them.

The submarine menace is not dwindling. More effective means of combatting the undersea boat are being perfected, but so, too, the striking distance of the submarine is increasing. The recent sinking of twenty ships practically at our own doors shows the necessity of growing more grain if only to supply that margin, which Mr. Herbert Hoover puts at 10 per cent. of the total grain shipments now sent to the bottom of the sea. We have no right to leave the anxiety for this only to those of our blood who happen to be in Great Britain. Let us be decent about it and play the game.

There are plenty of men in city occupations willing enough to go to farms for a month at a time. There may be exceptions. The involuntary does not always make the worst worker in the end, that is the argument of the Military Service Act. Generally, too, the farmer is becoming more receptive, and in Ontario he has taken kindly to this voluntary aid proffered him. This is being shown in the quickness with which the S.O.S. plan for boys was taken up in the Province of Ontario. Every one of these

boys who registered was placed, and thousands more could have been taken on farms had they been forthcoming.

But every employer or manager or leader of industry, no matter how small his staff, knows that the initiative must come from his side. A word expressed in time; a hint merely that the employer is willing that the employees may go is sufficient. As the Canada Food Board has put it in another connection, “The farmer wants help now, in the next ten weeks, not sympathy next Christmas.”

Then there is the selfish side. In Canada the proportion of home-grown food in the total national supply is far higher than it is in other agricultural countries. In Argentina, to take only the countries of the New World, home-grown food forms only 80 per cent. of the total, and in the United States it is 69 per cent. Canada produces 95 per cent. of her total consumption. Thus sending men to the farms is directly helping the home supply of each family more markedly than it would be anywhere else. Food must be got; if not, the cost of living will mount so long as the war goes on. Increased cost of living means discontent in the factory, the store and the office; discontent means lack of good work, a bigger margin of poor work to be re-done, irritation, and eventually demands, more or less organized, for increased wages to keep pace with family expenditure. These are things the farsighted employer and manager do well to consider and ponder in this appeal to allow men to go to the farms. With this realization they will urge by every means their employees to go out.

It is scarcely necessary to speak of the moral obligation. After four years of war that would be insulting the intelligence of men who lead our Canadian trade, commerce and business. If we put it no higher than a selfish motive it is still imperative to get men to the farms. If there is no food available on our side—and available, not in Argentina, Australia and India, but in Canada and the United States—victory will be far off. No one doubts that at the end we shall win, but meanwhile the war is costing the Empire \$35,000,000 per day, and national debts are mounting up at a terrific rate. No business man needs to be told that these debts are accumulating, only eventually to be paid. They are unescapable. A plentiful supply of food to the Allies is a strength and an encouragement. It is equally a weakening of the morale and a discouragement to the enemy. In that its supply in Canada adds directly to the quicker close of the hostilities.

Yet this food can only be garnered in by strong arms of men. The more men thus enlisted the more chance of the full crop being garnered. Every man on a farm does direct war work.

And, last of all, the individual leader of industry, the employer, and, consequently, the guider of men, is responsible, not for the British, French or Italian military measures, but for his own share in a common war. As stated, there is no new reason to be given for this latest call to employers and to employees alike. The tragedy is that it is an intensifying of the old reason, now four years old in horror, four years deeper in the incalculable despair and suffering caused. Every man on a Canadian farm, in a measure, compares with a man in the first line reserves. Will you prevent him or will you aid him to get there?

The New President of the Association

A Personal Sketch of Mr. W. J. Bulman

By HOPKINS MOORHOUSE

"ISN'T it a crying shame that a man should be separated from his wife for lack of a hundred dollars?" So said Norton Griffiths, British M.P., visiting Winnipeg in 1911.

"It certainly is," agreed W. J. Bulman, to whom he said it.

The subject under discussion was a higher standard of British immigration to Canada, and Mr. Griffiths pointed out the hardship which was entailed frequently through the separation of British families while the father was in Canada, trying to save sufficient funds for his family to join him here.

Mr. Griffiths went away. W. J. Bulman reached for his telephone. Next day a meeting took place between a few prominent Winnipeg business men and to them W. J. Bulman presented the idea of a guarantee fund of \$20,000 out of which advances should be made to British workmen to enable them to bring out their families without such long, discouraging separation as often prevailed.

There and then was born the Imperial Home Reunion Association of Winnipeg. In less than two days Mr. Bulman had eighty prominent Winnipeggers signed up as guarantors for the fund; in six months practical operation of the plan furnished results that justified expansion of the idea to other western cities; two months later the founder of the movement took the story east and thirty-six branches sprang up throughout Canada, doing much to facilitate the transplanting of hundreds of British families to happy homes in this country.

"I am delighted with the success of your humanitarian work," wrote the late Elbert Hubbard, and it was only one of many stimulating letters which reached W. J. Bulman from philanthropic people of prominence everywhere. "This last effort of yours is certainly in line with a big increase in human happiness, and the man who adds to the sum of human joy is a benefactor of his kind."

This is the same W. J. Bulman who has just become President of the Canadian Manufacturers' Association. In accepting the honor at the recent convention he regarded it as a tribute to the west rather than to himself. That would be his way of looking at it; but in Winnipeg, where a record of public-spirited achievement stands to his credit, he is by no means a man without honor among those who know him best. William J. Bulman was born in Toronto. It was there

that he was educated and started his business career as a lithographer in 1887. Desire for a broader field brought him to Winnipeg in 1892, and at that time it required imagination to foresee in the little prairie town a great future as an important city. He saw that future and set about the building of what has become one of the largest lithographing and printing establishments in the west. The firm name, Bulman Brothers, is still retained, although it is some years since W. J. Bulman has been alone in the business.

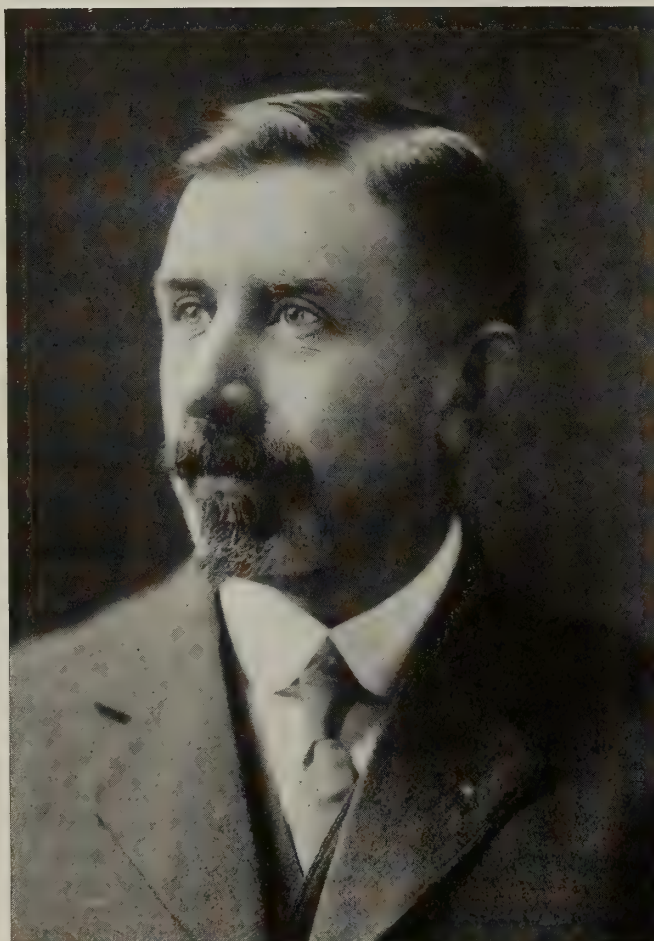
The whole plant and six-story building was burned down

in October, 1904; but while the ruins were still smoking Bulman was at the telephone, ordering a complete new plant. There followed a typical example of hustling; for it soon became evident that it would be impossible to find temporary quarters for the plant, and that its housing would require a new building. A site was located and workmen swarmed, urged by prizes which were hung up for speed. In three weeks a new building, 100 x 120 feet, was finished, the new plant installed and Bulman Brothers again hard at work.

In talking to this man, Bulman, one is impressed with his simple, direct way of speaking. While he has something to say he talks, and when he has said it he comes to a full stop. His thoughts set solid, clear as 12-point Roman, with no double leading needed to space out the measure of his subject. In action he reminds one of a dynamo; when he starts, everything around him begins to move and there is a hum of steady activity. Of great organizing ability, he seems to know instinctively the right levers to pull for direct results and his enthusiasm for what he

has in hand never fails to radiate among his associates, energizing them to full and intelligent co-operation.

Being such a high voltage member of whatever he joins, the direct current of his assistance has been tapped frequently at Winnipeg for various public enterprises. He has always been a booster for his home city and the west in the great future of which he is a firm believer. He has been actively identified with the Winnipeg Industrial Bureau for many years; in fact, it was due to his initiative that what was at first merely a publicity bureau expanded into a channel of community co-operation which has made the institute unique. It was Bulman who, as acting president and



—B. and C. Press Photo

W. J. Bulman

Bulman Bros., Limited, Winnipeg

later as president, obtained the site of the Industrial Bureau Building and planned its erection with its permanent manufacturers' exhibits, its large convention hall, its farmers' produce market, its art galleries and museum, etc.

As member of the Board of Trade, member of the Executive Council of the Canadian Club, member of the Public School Board and representative of the board on the Provincial Advisory School Board, W. J. Bulman has occupied a prominent place in the affairs of Winnipeg. He has inaugurated many original ideas, among them the plan for educational lectures to boys in the senior grades of the public schools to aid them in choosing their life vocation. These talks by successful business men in different lines of endeavor as to their struggles and successes have been printed in leaflet form for circulation among the scholars with good results. As a matter of fact, the plan attracted much favorable attention in the United States as well as Canada, and has been adopted in many leading schools of large cities—Chicago, Boston, New York, etc.

His Educational Work

More recently Mr. Bulman has identified himself with a plan to organize the work of moral instruction in schools. Briefly, the idea is the establishment of a foundation, generously endowed, under which men of outstanding moral earnestness, spiritual insight and wide learning would devote their lives to the work of ethical instruction in our schools, unhampered by commercial or political considerations or any sectarian aim; that they would search for and systematize the best means of weaving into the very texture of the growing child's life and character, the teachings of the Great Master of Life. Religious instruction in the schools is not to be confused with instruction along ethical lines; the subject is a profound one, beset with peculiar difficulties, but Mr. Bulman's efforts at a solution of the problem have been attracting widespread co-operation throughout the Dominion, and there is reason to hope that in the reconstruction period after the war the ethical side of our national endeavor will not be lost in the more material affairs which will command attention.

From these brief paragraphs it will be seen that the new President of the Canadian Manufacturers Association is a man of vision, and it is not too much to expect that the vital problems which confront the nation at the present time will not be overlooked. The west believes that Mr. Bulman will do credit to his position and thereby to himself. Whether he is regarded as an easterner from the west or a westerner from the east does not matter; for he has broadened into that citizenship which, east or west, is called Canadianism—the sort of citizenship that overtops divisions, be they Laurentian or sentimental.

Mr. Bulman has been Vice President of the Canadian Manufacturers Association in the past. At Winnipeg he has gathered about him a strong coterie of steadfast business men who constitute the nucleus of the city's industrial growth. He is a member of all clubs, a director in several companies and Honorary President of the Conservative Association. He is a genial, affable man of affairs, an untiring worker and a public-spirited citizen.

Development of Leather

During the Past Generation Rapid Strides Forward Have Been Made in the Process of Manufacturing Leather

In a recent magazine article Major Allen Rogers, a member of the American Chemical Society, brings out many interesting facts in the development of leather manufacture.

The manufacture of leather, which dates back to the early days of the Garden of Eden, came down through the centuries practically unchanged. During the past generation, however, strides forward have been made and to-day there is such rapid progress along this line that one has to be on the alert to keep up with the latest developments.

The age of "Black Art," when mystery surrounded everything chemical and when scientific knowledge was a secret to which only a chosen few were initiated, has gradually given away to our present day frankness in dealing with scientific problems.

This is an age when science is being applied universally to manufacturing industries and especially to leather manufacture. It is no longer hit-or-miss guess-work but is scientifically planned so that the results to be obtained can be foretold. In all the phases of leather making, from obtaining the skins and hides from the animals through the refining processes of curing, removing hair, tanning and dyeing, there has been great advancement due to the application of scientific methods.

In place of the time-consuming process which took from one year to eighteen months, we are now making the bulk of our sole leather in from sixty to ninety days, with a resulting article that is superior in wearing quality, style and ease to the old product.

We have only to think of the new and improved leathers we are using to-day which did not exist ten years ago to realize what the chemist is doing to help advance this particular line of industry.



Some of those present at the Montreal Convention

In the front row will be noticed J. A. Riordan, Toronto, ex-chairman Transportation Committee; S. J. B. Rolland, Rolland Paper Co., Montreal; W. C. Laidlaw, Toronto, chairman Membership Committee; J. S. McCannell, Milton Pressed Brick Co., Milton; and J. F. M. Stewart, Pointe Anne Quarries, Limited, Toronto.

Our Relations with Labor and Agriculture*

Two Subjects of Great Importance Are Discussed by the Retiring President of the Association—An Appeal Made to Lay Aside Any Ingrained Prejudices—Members of the Association Should Approximate the Spirit of Those Who Are Defending the Country

By S. R. PARSONS

President, 1917-18, Canadian Manufacturers Association

THERE are two subjects of sufficient importance to claim our particular consideration this year and upon which we should focus our attention. I have, therefore, concluded to disregard all precedent, which if followed would constrain me to deal in a somewhat discursive manner with many matters of interest to our Association and the country at large.

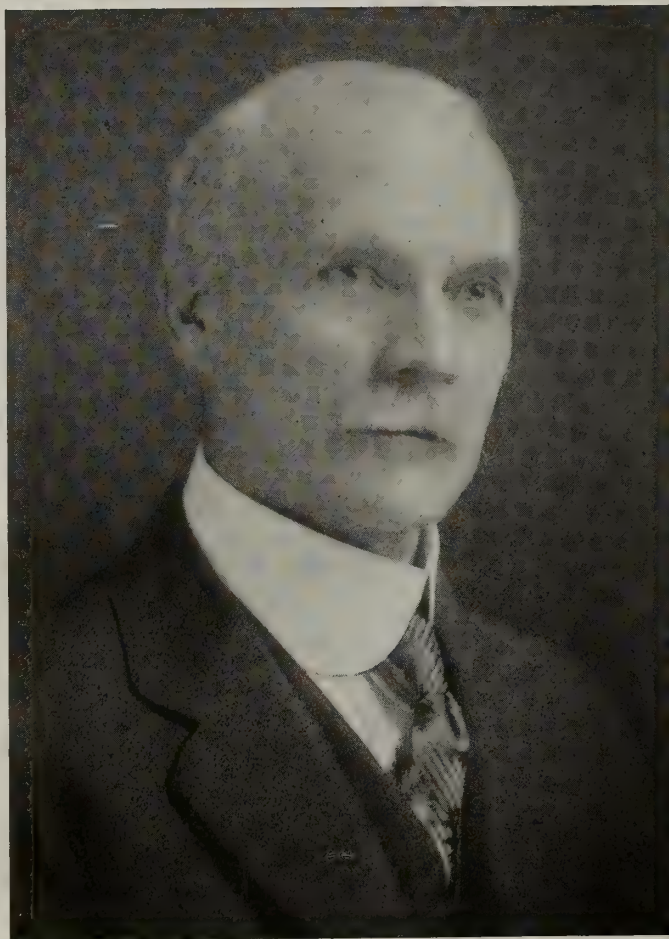
The first question has to do with the relationship between employers and employees, and the second the problems of the tariff, particularly as affecting manufacturers and agriculturists. In discussing these topics I am sure you will agree with me in saying that we should lay aside any ingrained prejudices or conclusions which would prevent us from reaching decisions that are unselfish, broadminded, and national in scope. As men holding a high and important place in the nation's affairs we should feel that unless we approximate in spirit many of our members, as well as hundreds of thousands of others, who have without reserve given themselves freely to the service of the country in defence of the things that we all hold dear, we are disqualified for dealing with important interests which have to do more particularly with the nation's life at home. From an intimate knowledge and association with the manufacturers of Canada, far and wide, I know that as a body they are characterized by the highest ideals of citizenship and service.

First, then, let us consider the question which is usually dealt with under the heading of "Capital and Labor." We have been learning many things during the past four years and while all sorts of doctrines, theories, and even fads, are being put before us which are more or less impracticable in character, yet it would be a great pity if the fine idealism which is being preached could not be turned to useful account as far as possible. The thing which we call

democracy is revealed more in spirit than in organization or regulations. If democracy is going to be anything more than a label on an empty bottle it must characterize our human relationships and actions. We have, perhaps unconsciously, ignored to some extent the human element in giving effect to the relationship existing between employer

and employed. In the old days when in small shops the so-called "master" worked with his men, often at the same bench, and each called the other by name, there was continuous friendly intercourse which resulted in producing good relations throughout. Afterwards with the introduction of machinery there was brought about an industrial revolution. Instead of the small shop with few workers there was the great factory with many hands, so that it soon came to pass that employer and employee did not often meet or even know each other. The result in many cases has been that the workers came to look upon themselves as part of the machinery of the organization to be used solely in the interests of the producing capacity of the business. It was quite natural, therefore, to expect that disagreements would arise between the two chief interests involved that have led here and there to occurrences of which neither side could possibly be proud. We have now come to see that just as a human body cannot do its best work unless the integral parts are acting together, so in the case of our great industrial system there must be a living spirit of working together in order to complete service. We have had, perhaps, more or less of

the external form and have boasted too much about the body of democracy when having little of the soul. Looking around us, and especially in Old World countries, though not unknown even in Canada, there are armed camps of Capital and Labor. I have no hesitation in saying that these should find some method of union. These two classes must stand together in their own interests. There must be a meeting



—B. and C. Press Photo

S. R. Parsons

British-American Oil Co., Limited, Toronto
Retiring President, C.M.A.

Mr. Parsons is generally acknowledged to have made one of the best presidents in the history of the Association. He has been exceedingly active and has brought to bear a great deal of enthusiasm on the work. In this he has established a precedent which will be to the general advantage of the Association. Mr. Parsons has been active in the Association since 1911, when he became chairman of the Transportation Committee.

*Annual presidential address to the members of the Canadian Manufacturers Association, June 12, 1918.

ground where antagonism and suspicion shall not dwell. The situation at present is aptly described by the quotation:

"In the world of industry employers explain too little, employees exclaim too much, economic teachers proclaim only a bias, and politicians only declaim. There is no one to interpret—no, not one."

Better Relationships

Now, the question is as to how to bring about a better relationship. No one will question the advisability of trying to regain an attitude akin to that which prevailed in the seventeenth century when there was a glory and a pride in trade and craft, which has been largely lost out of our industrial life. What a day it would be if we could make a song of our work instead of a dirge of our grievances! Capital on the one hand must realize the duty of caring for the welfare of all those associated in industry, and Labor must be ready to co-operate to the fullest possible extent in a spirit of helpfulness. My own opinion is that each individual industry will work out its own plans applicable particularly to the special conditions governing the concern. Many schemes, some of them quite elaborate, have been brought forward in Great Britain, providing for a more effective co-operation between employers and employees. In the United States some plans of co-operation have already been put into effect and others are being considered. Everywhere there is the feeling that the time has come when most earnest consideration should be given to this important matter. Nearly all the plans which have been put forward carry with them the idea of representation in our great manufacturing enterprises from both Capital and Labor. In some industries a committee of ten or twelve is appointed, half of whom represent the company and the other half the employees. These representatives are charged with the duty of dealing with matters such as employment, discipline, right of appeal, wage adjustments, and joint conference. In a certain industry employees after one year's service are insured at the expense of the company, the amount varying from \$500 to \$2,000; in case the employee leaves the service of the company he takes his policy along with him and keeps up the insurance if he wishes to do so. Annuities are also provided after twenty years of service. No one industry can be a pattern for all as the ability to deal with such questions is not shared equally. It appears to me that it is impossible for us to develop immediately a satisfactory plan of co-operation that might suit all the different industries with their varying conditions. There is, however, no reason why a start should not be made and some headway gained. The evolution of processes must be gradual; the new heaven and the new earth will not burst upon us in a day. Personally, I am not at all afraid to trust representatives of our workmen to join in plans of co-operation in the interests of all concerned. When we think of what our men from the ranks of Labor have done in this great war, coming forward largely under voluntary enlistment, and when we realize further the valor they have displayed on the battle-front, they are not only entitled to proper recognition at home, but to a consideration of their interests, which hitherto they have not had in large enough measure. One thing appears to be certain, namely, that where individual interest, ambition, and good work are shown these must all be recognized by both interests in the business and properly rewarded. On the other hand the unwilling and the inefficient must not block the path of the ready and the skilful. *There can be no universal betterment applying to each and every worker in any scheme of co-operation without individual participation if we are to hold our own against other countries and nations whose competition we have to meet both at home and abroad.* I would like, however, to see such a spirit of mutuality and

co-operation engendered that the two great classes would think together and not apart. I believe this would result in such efficiency in all our organizations that we would be able to increase our home and foreign trade, help pay our war obligations, make reasonable profits, and pay higher wages than would otherwise be possible. It should be remembered that as from the ranks of Labor a very large proportion of our men have gone to the front, so when the war is over to the ranks of Labor they will be returned. Much as we would like to see the returned men go upon our farms, yet the great majority will naturally revert to their former occupations. They will, therefore, be a charge for the promotion of their interests upon our towns and cities and the manufacturing industries in particular. We cannot begin too soon to lay our plans for giving effect to that particular form of co-operation which will fit our individual concerns best and enable employers and employees to serve one another.

Our second great question is that dealing with

Manufacturers, Agriculturists, and the Tariff

More than a generation ago the National Policy was brought into existence and, therefore, the great majority of men doing business to-day in Canada do not remember the hard and trying years before its introduction in 1878. At that time the country was making little headway under a revenue tariff of 12½ per cent. Our industries were comparatively unimportant and American factories supplied us in large measure with products such as have since been made in Canada. Generally speaking, the commercial interests of the country were languishing and our bright young men were attracted in large numbers to the United States, a country being built up and prospered under a policy of protection. We are now in danger, especially on account of the propaganda of one section of our population, of failing to profit by experience, losing our balance, and blindly yielding to the demand for undermining that which has proved to be the great bulwark of our national, industrial, and commercial life.

Tariff Truce

It was understood, when Union Government was formed, that the agitation of the Western grain growers for the abolition of the tariff would not be continued during the period of the war. This has been denied by some of the grain growers during the session of Parliament just ended, but a newspaper report of an address by Honorable T. A. Crerar, at Winnipeg, in the election campaign states:

"The Minister of Agriculture alluded to a conversation with a farmer in Toronto the other day, who asked him:

"What concessions did you get on the tariff?"

"I required no concessions," declared Mr. Crerar, "The Tariff is not the issue at present. I feel just as strongly on the question of tariff as any man. I have not sacrificed these views in entering a Union Government. The tariff is not the issue at present. The great outstanding issue is the winning of this war."

The *Toronto Globe* referred editorially to this matter and spoke of it as a "truce"; in fact it was more or less the general expression of opinion at the time of the formation of the Union Government that tariff matters would not be referred to until the war was over. The manufacturers, therefore, accepted this view and would have respected same throughout if others had done so. We have found, however, that in the Western Provincial Legislatures resolutions have been passed asking for the removal of the duty on agricultural implements as a so-called "war measure." In farmers' papers and other organs there has been carried on a constant agitation against the tariff and denunciation of the manufacturers. Grain growers have recently challenged manufacturers to

come out openly and declare themselves upon the tariff question. Much as we would have preferred that there be no consideration of this question during the period of the war, as all our attention should be fixed upon our national obligations with respect thereto, yet some measure of action has been forced upon us and it is, therefore, necessary to deny many of the unfair, erroneous, and misleading statements that have been made for the purpose of trying to prejudice the minds of the public against manufacturers and manufacturing interests of this country.

Agriculture and Industry Interdependent

Our statements should be prefaced with the remark that the manufacturers of this country, along with all other classes, are vitally interested in the success of the agriculturists and will not be satisfied until the fullest possible measures looking to their betterment, and removal of any inequalities or unfair burdens, are accomplished. It surely is not necessary to do this, however, at the expense of other classes and at the risk of ruination of our great industrial fabric, built up with great care and national efficiency. A great Toronto daily sets forth admirably the relation of manufacturers to agriculturists in the following words:

"If agriculture is the backbone of the Dominion, industry is the sinew and brawn. Each is vitally important; they are interdependent. Progress and prosperity for one invariably means progress and prosperity for the other. Their success provides food or their failure provides famine for the people. Trade balances depend upon their activity. A favorable balance swells Canada's bank roll, and the people become prosperous and very happy under normal conditions."

Reciprocity

We are told that especially in the West, peopled so largely with American citizens of an excellent class, there is more or less of a demand for reciprocity, if not a closer connection, with the United States, which, perhaps, is quite natural, particularly among the class referred to. While as Canadians we value more than ever our friendship with the great nation to the south of us, yet we believe we have an important part to play as an integral portion of the great British Empire and in working out our own future. When there was an agitation for reciprocity, in 1911, and which certain elements in our population are now trying to revive, the majority of the people decided against it and in favor of a continuance of our national, political, and fiscal policy and entity. As nothing has occurred since to lead us to believe that we were mistaken at that time, it is perhaps well now to emphasize our views and refresh our minds on the question by referring to what the then President of the United States thought of the reciprocity campaign and of its effect upon Canada as well as the United States. In a letter written at the time to Colonel Roosevelt, and made public afterwards, President Taft said:

"The amount of Canadian products we would take would produce a current of business between Western Canada and the United States that would make Canada only an adjunct of the United States. It would transfer all their important business to Chicago and New York with their bank credits and everything else, and it would increase greatly the demand of Canada for our manufactures. I see this is an argument against reciprocity made in Canada, and I think a good one."

We all know that Mr. Taft is an extremely capable business man as well as politician, and he recognized at once what even a measure of reciprocity, such as was then proposed, would mean to both countries. It would thus appear that our shrewd friends in the United States saw in the proposition what some of our Canadian politicians and others were blind to. The war-time measures of reciprocity that have been created are hardly a valid argument for their

operation in normal times from a national standpoint. *Surely we would not be foolish enough now to want to place our country and our national existence in the condition so well described by Mr. Taft, nor are we ready to believe that our destiny lies in a severance of Empire ties.* Already Great Britain is taking steps to bind all parts of the Empire together in closer commercial relations for after-the-war trade. We in Canada have helped to create, as well as bear, heavy Empire war burdens and this ought to be followed by our full share of peace responsibilities; in fact our national and our Empire obligations must now be paramount in our thoughts and plans and receive greater and more serious attention than ever in the past.

Hostility to Manufacturers

It would appear from the propaganda being waged with such vehemence against the manufacturers of Canada that the chief view presented is that the tariff is retained solely to benefit the manufacturers and to oppress all other classes of the people, the farming community in particular; in fact one of the leaders in this propaganda in a recent article, which throughout is full of abuse of the manufacturers, commences the same by quoting from Sir Wilfrid Laurier in June, 1893, as follows:

"But I appeal to your judgment in the face of the experiment of the last fifteen years under the system which was introduced by the Conservative party, which was dubbed the 'National Policy,' to say if that system was not vicious in principle, iniquitous in its terms, and dangerous in its consequences. I say that it is vicious in principle."

Now this quotation is evidently brought forward to give the farmers of the West the view that Sir Wilfrid Laurier is the apostle of Free Trade and a non-believer in the National Policy. It would have been more honest had the writer stated that when Sir Wilfrid came into power and was in the saddle for so many years he found the retention of the National Policy, as reflected in the tariff, to be entirely necessary in order that proper revenues might be raised for the country. The writer in question further refers to the manufacturers in his "Hymn of Hate" as follows:

"It is conclusive proof that the 'infant' we have so tenderly nursed for fifty years has become a selfish giant, as ruthless and destructive as the one we are sending our armies to resist in Europe to-day. Never before in the history of our country has the mailed fist of special privilege so plainly shown itself."

Trade and Tariff Board

It is, therefore, quite evident that the time has come when the manufacturers of this country can no longer keep silence, either in their own interests, the interests of Labor, or the great national interests of this country. It should be remembered that the present tariff, with changes here and there, was enacted as a great national policy, not for the benefit of any one class but for the well-being of the nation at large. No one who is not ignorant of the subsequent history of our Dominion can say that it has not justified its existence. An enormous revenue has to be raised in any case and in no other way can the amount produced by the tariff be raised so easily and fairly as by the present methods, which at the same time incidentally give reasonable protection to our great manufacturing industries. Manufacturers feel that the tariff could and should be changed here and there, and so amended that it would apply more scientifically than it does at the present time. *For this and other reasons the manufacturers would like to see created what might be termed "A Trade and Tariff Board"; such a Board to be composed of representative men of actual experience and wide knowledge of commercial conditions and whose broad outlook and vision would fit them particularly for the proper study of*

these great questions so vital to our national interests; this Board to report to the Government from time to time their findings and if after a full and complete survey of the situation it be clearly established that the tariff is inimical to the best interests of the country at large; nay, more than that, if it is not actually essential from a national standpoint, then, I say, "Away with the tariff."

Not Simply Give and Take

The time has arrived when we must all face this matter in a sincere and broad-minded fashion. It surely cannot be simply a matter of give and take as between manufacturers on the one hand and grain growers on the other. Labor must be consulted and considered, the transportation interests of the country (now so largely controlled by the Government) must have their say, the great financial institutions of the country, wholesale and retail business, producers controlling our mines, forests, and fisheries, are all vitally interested in the question of the tariff and must clearly have a voice as to its retention or otherwise. In giving expression to the convictions of manufacturers in this manner we should at the same time be glad to meet the grain growers of the West and would do our part to try and bring about a conference to be held a little later in the season in the City of Winnipeg; this conference to be followed by other meetings if necessary. We desire most earnestly to co-operate with our fellow producers and to show them in the frankest manner our problems and to be shown by them their handicaps, in order that we may each of us see where changes could possibly be made that would be of mutual benefit and help.

Industrial Protection Essential

We would, however, be altogether insincere and dishonest did we not state in general terms that if there is one thing more certain than another, it is that manufacturers could not possibly exist in this country without the small measure of protection which the tariff affords them. The two stand or fall together. Speaking broadly, Canada must choose between the tariff with manufacturers on the one hand or free trade without manufacturers on the other; the issue cannot be dodged and should not be clouded. Living alongside a populous country of highly specialized industries, catering to a home demand of twelve times as many people as we have in Canada, it would be suicidal for us to attempt to compete, or develop our new country on the basis of free trade. It is, perhaps, interesting to note that notwithstanding the enormous population of the United States and the great home markets that are open to them, they have found it necessary, in their own interests, to retain a large measure of protection by means of the tariff. Even under the present Democratic Government, reduced schedules, the average rate of duty paid on imports of dutiable goods, coming into the United States for the year ended June 30th, 1916, was 30.67 per cent., while in Canada, for year ended March 31st, 1917,

it was only 23.78 per cent., so that our own tariff is approximately only about 75 per cent. as high as the American tariff on dutiable goods. The War Tax of $7\frac{1}{2}$ per cent., although added to the cost of imported goods, free and dutiable, was not proposed or desired by the manufacturers. It would appear, therefore, that those who complain of our high tariff walls have not full knowledge of our comparative position in this matter. It should be remembered that manufacturers pay heavy duties on much of their imported raw material; for instance, a large machinery-manufacturing concern in Toronto have advised me that while the tariff on their finished article would appear to give them a protection of $27\frac{1}{2}$ per cent., yet their figures over a number of years show that the average rate of duty they pay on their raw materials is 25 per cent. The protection to the manufacturer in this particular case, as in the case of very many other lines is, therefore, reduced by the amount of duty paid on the raw materials, leaving only an extremely moderate margin of actual protection.

Honourable Chas. A. Dunning, Canadian Director of Production, is quite too good a business man not to see very

clearly that even the removal of duties on agricultural implements for the farmer means that much additional burden of taxation to the population as a whole. In making his report covering the proposed removal of duty on agricultural implements, he stated he was "not concerned with questions of tariff reform, federal revenue, questions of permanent fiscal policy, or the age-long issue between free trade and protection." Just so; if these important national considerations may be completely ignored, the whole question is extremely easy of solution. Be it remembered, though, that the two million dollars said to be raised yearly from duties on agricultural implements, if not so produced, would have to be shouldered by the people at large.

Should the Burden Be Shifted?

At this particular time in our national history, when employment for returned soldiers is going to be a matter of paramount importance, and when the largest possible revenue must be obtained in all directions to carry our gigantic war debt, the question may fairly be asked: "Is the farming industry languishing to such an extent that in order to help it out there must be destroyed, or even impaired, its fellow producer, the manufacturing industry of this country?" In fact the weakening of the latter from our standpoint would mean partial destruction of the former. However, perhaps some figures and statements sent out by the Grain Growers' Guide (the official organ of the agriculturists of the West) to prospective advertisers, would help to make clear the question as to the condition of the farming population. It is stated that, based upon the figures for 1917, there will be 60,000 motor cars purchased in 1918 in the three Prairie Provinces, having an average value of \$1,000 per car, making an investment of sixty million dollars, and that another ten



Snapped at Montreal

Lt.-Col. W. J. Sadler, Montreal, one of the active members of the General Convention Committee

million dollars' worth of accessories will be purchased. It is further stated that while in the United States the farmers bought forty per cent. of the cars sold in 1917, the proportion sold to farmers in Western Canada was twice this figure. It is further stated that "Western Canada, and especially the farmers of Western Canada, should therefore be the best prospects for your sales efforts in 1918." Another significant statement reads:

"A recent investigation, conducted by the *Grain Growers' Guide*, into nearly three hundred districts in Manitoba, Saskatchewan, and Alberta, confirms emphatically the oft-asserted claim that *nowhere, and with such unanimity over such a wide area, is nature so bountiful or is the return per capita from farm life so profuse as in Western Canada.*"

"The following data is taken from this investigation:

Average size of farm.....	382 acres.
Number of farms owned.....	92½ per cent.
Number of farms rented.....	7½ per cent.
Average acreage under crop.....	195 acres.
Average value of farm holdings.....	\$11,010.
Average number of persons per farm home....	5

"The wealth, as indicated above, is concretely illustrated by the official list of automobile licenses issued in Western Canada in 1917. The average for the Dominion of Canada as a whole is one auto to every fifty-seven people. The average for Western Canada (Manitoba, Saskatchewan, and Alberta), is one auto to every twenty people."

Value of Cereals and Other Crops

The figures given also emphasize the fact that in 1917 the cereal crops alone averaged in value per each farm \$3,725, and that the average capital worth (land, buildings, machinery, live stock), was, as stated above, over \$11,000, and that the average capital worth of the *Grain Growers' Guide* subscribers was \$25,878. *Taking their own figures of the average value of farm holdings and the average returns for the past three years, it shows that the cereals alone, without counting any other crops, have produced thirty-two per cent. per year upon the capital.* There are many other extremely interesting and very satisfactory figures and statements given, all showing the great progress the agriculturists of the West are making. Now, in addition to the cereal crops mentioned in the *Grain Growers' Guide* circulars, we have figures issued in a bulletin by *The Nor'-West Farmer*, taken, it is stated, from 1917 final crop and live stock reports of the Provincial Departments of Agriculture in Manitoba, Saskatchewan, and Alberta. *A study of these reports gives the total value of farm products, other than cereals, at a little larger figure than the total value of all cereals.* It is fair to assume, therefore, that on the average all the expenses of farming operations would be more than met by the production of other than cereal crops, whether such products were sold or retained to add to the farmer's capital. This, then, would leave at least the profit on cereals as net returns, and I do not hesitate to say, after careful calculation, that it would be quite double the average net profits of manufacturing during the same period of three years. The first year (1915) was disastrous, generally speaking, in manufacturing, and while the last two years have been unusually profitable in many lines, yet in others war conditions have brought paralysis. No class in Canada, however, rejoices more in the prosperity of the farmers than the manufacturers. We realize that unless producers in all classes in the country, whether engaged in farming, manufacturing, mining, fishing, lumbering, or other forms of industry, are prosperous, it is utterly impossible for the country as a whole to progress as it should. It would appear, however, from the figures given by the agriculturists themselves, as quoted above, that just now is not an opportune time for them to ask other classes of the population to assume burdens of taxation which they would like to be relieved of.

It is interesting to note that the total number of farmers in Canada holding ten acres and over is 633,748, or about equal to the total number directly engaged and employed in manufacturing.

Industrial Statistics

Now, in order to ascertain what the National Policy has done for Canada, and is doing in the building up of our great national interests, it might be well to refresh our minds with some statistics. In the year 1915 returns show that the total number of people engaged in manufacturing on salary and wage-earners was 514,883. If we consider the munitions-making and other industries, in which women are now largely employed, we might fairly estimate the total number to-day as being about 650,000. If we multiply this number by two and one-half we should probably reach the total number directly dependent upon the manufacturing industry for their livelihood, making 1,625,000. If we add to this total the number of people who indirectly make their living on account of the total industrial dependents, we should add from twenty-five to fifty per cent., the number varying according to conditions governing different localities. This division would include farmers and truck gardeners, railway (steam and electric) workers, banking interests, civic employees, butchers, bakers, storekeepers, caterers, etc., etc. Adding only twenty-five per cent., this would give a grand total of over two million persons. The total capital employed is estimated at two and one-half billions. The total exports of manufactured products last year was \$682,521,000. A comparative estimate of our main products for home and foreign consumption for the year 1917, according to the "Canadian Annual Review," is as follows:

Manufactured products	\$2,000,000,000
Field crops	1,100,000,000
Dairy products and live stock	1,300,000,000
Forest products	176,000,000
Minerals	200,000,000
Fisheries	34,000,000
Eggs, fruit, etc.	40,000,000

It might be interesting to try and figure out what it would mean in the case of a great manufacturing centre like the city of Hamilton to have its manufacturing industries removed. The total population of Hamilton is 106,000, having increased from 52,000 in 1900. The total number of manufacturing plants is 340; the total capital invested \$110,000,000; the total number of hands employed, including office and travelling staffs, 30,000; total wages and salaries paid per year, \$25,000,000. Statistics show that upwards of fifty United States concerns have located branch industries in Hamilton, representing a capital investment of about \$25,000,000. These concerns, of course, would not have located in Canada except for the incidental protection which the tariff affords. Considering the extreme industrial activity at present in a place like Hamilton, calling for large numbers of women workers, it is probable that only about two and one-half times the actual number of hands employed would be directly dependent upon industry, making a total of, say, 75,000. If we add to this even twenty-five per cent. more, as being indirectly dependent upon industry, we have a total population of over 90,000 dependents (direct and indirect) for their living upon the manufacturing industries. Any interference in any large way with the tariff which now enables these manufacturers to do business would practically wipe out the city of Hamilton. What is true of Hamilton would be measurably true of many other towns and cities.

Agricultural Implements

We might also ask what would be involved in the question of removing the duty on agricultural implements? There are approximately 160 firms in Canada making one or more lines of agricultural implements, so that the figures given

below do not include many agricultural implement manufacturers who make other lines as well, nor do they include companies subsidiary to or dependent on the agricultural implement industry. The number of agricultural implement plants proper is sixty, total capital employed \$60,000,000, total wages and salaries \$7,000,000, estimated number of people directly and indirectly dependent upon the implement business 40,000 to 50,000. Now, it is quite possible that if the duty were removed on agricultural implements (and it must be remembered that the rate of duty is considerably less than manufacturers have to pay on any machines imported for use in their factories), and the duties were also removed from the raw materials entering into the manufacture of such implements, a few of the larger concerns might still live on account of their large foreign export business; yet as they purchase millions of dollars worth of supplies of all sorts from other manufacturers in Canada, all such secondary concerns would be adversely affected immediately, and there would be a general weakening and tearing down of a large portion of the industrial fabric of the country throughout. Figuring the total duty paid on agricultural implements in 1916, and taking the total value of the property of the farmers throughout Canada, it means about 3½c. for every \$100, or in other words, a farm valued at \$10,000 would pay on the average annually \$3.50. This does not seem like a staggering obligation by way of contribution to the national funds. The removal of the duty on tractors, without any consultation with the tractor manufacturers, to see what they could do to help out the situation calling for greater production, and without even making provision for the rebate of the duty on raw materials imported by the tractor manufacturers, was an unfair and unjust measure. We made such representations to the Government that they finally rebated the duty charges on raw materials, but the tractor industry, where hundreds of men were employed and others in anticipation, as well as hundreds of thousands of dollars already invested, has been paralyzed, at all events for the present.

Manufacturers' Contributions and Obligations

Manufacturers are, however, quite tired of the abuse that is being heaped upon them from interested quarters, and while it is readily admitted that there may be many schools of economists of widely divergent views, yet it is high time that a policy of standing together in our national interests be adopted, and that we should emphasize the need of common honesty and sincerity being shown in the statements that are being circulated. The profits of manufacturers, generally speaking, have been grossly exaggerated, and while here and there abnormal figures are shown (which are subsequently largely extracted by the Business Profits Tax), yet the large profits feature also applies in the case of agriculturists. The great majority, however, of these two classes, as well as of all other classes in the country, are simply making reasonable and necessary headway. Let us look at what manufacturers have helped to accomplish in the last three and one-half years.

1. Manufacturers have contributed more largely than any other class to the furnishing of men for the colors.

2. Manufacturers in large numbers have entered into personal obligations with those of their men who may return as to giving them employment. As this matter of employment will be one of the most insistent questions after peace is declared, it might pertinently be asked how manufacturers can fulfil their part of the compact if the fiscal policy of the country is to be radically changed?

3. Manufacturers have been called upon to assume greater burdens of taxation than possibly any other class, and especially the farming community.

4. Manufacturers have, perhaps more largely than any other class, contributed to all patriotic funds which have been launched.

5. No class has subscribed more liberally to all Government war loans, and it must be remembered that in very many cases

those so subscribing have undertaken large obligations at their bankers to enable them to do this. Manufacturers would greatly regret being placed in such a position, either by reason of removal of the tariff or taxation measures, causing strangulation of industry, that would not permit them to continue such relationship towards future Government undertakings.

6. No class has supported the farming community as much in the way of helping to supply men for the garnering of the crops, and in many cases even paying the difference in wages over and above what the farmer contributed.

7. If it had not been for the manufacturers of this country the Allies would not only have been short of munitions, but the country would have gone bankrupt on account of the balance of trade being against us. This war industrial activity has been recognized by Sir Frederick E. Smith, Attorney-General of Great Britain, in the following sentence: "She (Canada) has developed for war purposes a resource of manufacturing ability of which no one could have supposed her capable."

The time has arrived, therefore, when the Government, members of Parliament, and the people at large must be fair to the manufacturers of this country and not consider their interests as a football to be kicked about by interested politicians and others, otherwise the national interests are sure to be adversely affected. The tirade of abuse has already gone too far.

Australia's Attitude

By way of contrast, it is interesting to note that in Australia the Prime Minister, Mr. Hughes, called all the manufacturers together in conference and outlined to them a very definite scheme, calling for their help and promising the co-operation of the Government for the furtherance of industry, and especially to try and secure export business; in other words, the Government of Australia is so seized with the necessity of maintaining and enlarging her industrial life that the Government commits itself to plans of co-operation that are most commendatory. In a remarkable address at Melbourne, Mr. Hughes closes with these eloquent and significant words:

"I do not hesitate to say that with proper organization we can increase the output of the primary and secondary industries very substantially. We can rapidly increase our export trade. We can place industry on a firm basis by an organization which will aid the individual producer to increase his output, find him markets for his product, and ensure transport at reasonable rates thereto. And in this way we shall reduce the burden imposed upon us by this great war, rapidly develop our resources, find regular employment for our people at high wages, and attract large numbers of the right kind of immigrants. The war has brought to us, as to all the nations of the earth, many and grave responsibilities. We must be prepared to shoulder them. We have not only to produce more wealth to pay for the war, and to develop this our glorious heritage, but we have to hold it for the Empire and for our descendants. But there is something greater. That far-flung domain known as the British Empire produces every mineral known to man and every variety of the animal and vegetable kingdoms. Its wealth is uncountable, its resources illimitable. Organized it can control the world; unorganized it must fall a victim to a more efficient nation, and its wealth pass through divers channels to alien lands. A deep and lasting obligation rests upon all the dominions to play well their part in this great plan of national organization, without which we are undone. Inexorable circumstances, patriotism, and common prudence alike compel us to adopt such a policy as will at once develop our resources, increase our production, and ensure our national safety."

Great Britain and Industry

Great Britain realizes that in order to hold her own as a nation and maintain her prosperity, she has not only to do everything possible to get hold of trade again, which she has temporarily lost during the war, but she must also put herself in a position to regain that which other nations, particularly Germany, have taken away from her during recent years,

largely on account of governmental direction and help. All sorts of guilds and associations are being formed, acting under the supervision and co-operation of the Government in Great Britain, to secure the fullest measure of trade for British industries. Sir Albert Stanley, M.P., President of the Board of Trade, said recently:

"He could not help thinking, perhaps wrongly, that past Governments of Great Britain really failed to take into account the fundamental fact that this was a commercial era, and that the efficient conduct of the great industries of the country was absolutely vital to its welfare. Unless industries could be carried on with an equal degree of efficiency, unless they could produce their manufactured products at prices that would compare favorably with those of their great foreign competitors, what chance had the country of succeeding in establishing its place with the other nations of the world? He thought that the governments from now on would take an infinitely greater interest in industry, and would make it their business to see that it was carried on efficiently, and that there would be secured to the country the establishment of industrial enterprises which would make it absolutely secure against dependence on any foreign country for any essential commodity."

Canada Being Poisoned

In Canada, however, not only have we received no direct help and lead from the Government in connection with planning for our industries after the war in the nation's interests, but a considerable section of our population is keeping the country in a foment of agitation which would tend to destroy rather than to build up. *There is only one way to pay off our accumulated war debts, and that is by producing in field, forest, mine, and factory all that we possibly can, and selling these products at as high a margin over the cost of production as we are able to secure.* As far as export trade is concerned, manufacturers in Canada may be forced in the national interests to sell their wares at a merely nominal margin of profit so as to help preserve the balance of trade and at the same time give employment to the largest possible number of people. The crux of the situation calling forth denunciation of industry, we believe to be just here. Interested parties have poisoned the minds of agriculturists and other classes in this country and have led them to believe that the manufacturers not only received directly an enormous advantage from the tariff which they were not entitled to, and in consequence were making profits which were out of all proportion to the risks involved, but were also actuated by the most selfish motives. It is, therefore, opportune to say fairly, honestly, and emphatically that the average net return from the investment of capital in industry is not more than it should be to encourage men to take the risks incident thereto. Further, while here and there large profits have been made by manufacturers, as is also the case of agriculturists and other classes, yet the history of the past generation shows thousands of abandoned industrial enterprises in which men have lost their all, just as there have been abandoned farms that were not made to pay. In the United States, according to recent returns made to the Federal Trade Commission, out of 250,000 trading and manufacturing concerns over 100,000 earn no net income whatever; in addition 90,000 of them make less than \$5,000 per year, some of whom have very large capital invested. It is the same thing in Canada: the few succeed, whom we all hear about from the housetops, and the many either just get along or languish and die.

Agriculture Needs Home Markets

The Old-world countries are already taking steps to make themselves more self-contained and self-supporting in the matter of food stuffs. It may not be long, therefore, before the agriculturists of this country realize that they must depend more largely than ever before upon the home markets.

To this end manufacturing industries, if encouraged, should be established all through the West as soon as the population is able to take care of them and raw materials may be secured. No nation can become great that is concerned solely with agriculture. *Every important country in the world, except Great Britain, has found it necessary to adopt a policy which gives protection to its home industries, and many believe that she will be forced to fall into line after the war is over. Under free trade agriculture has not prospered.* A writer in *The Athenæum*, for February, 1918, in a remarkable article, admits that he was "brought up to revere free trade," but believes the time has arrived for fresh consideration and revision. He says, "The politicians must now see that it is life and death for England, and for English men and women; it is no game for political struggles, no academic arena for non-participant, detached philosophers."

This section of my address would not be complete without the statement that the challenge of the grain growers, through their official paper, to the manufacturers to declare themselves on the tariff, and to which I was compelled to respond, led me to study the question from their standpoint as well as ours. If the figures given do not tell all the story, and the agriculturists of the West are not receiving proper consideration, then we should be the first to co-operate with them in trying to remedy their difficulties.

There is said to be a condition existing among the truck farmers and gardeners of the East whereby they receive only an average of thirty-five cents as their portion of every dollar's worth of products sold. If this is correct, it is a wrong that should be righted, and for this purpose the facilities of our Association would be placed at the disposal of those interested.

Concluding Words

In concluding my address, I desire to thank my fellow officers, the members of the Executive Committee and of the Council, as well as the membership throughout, for the remarkable sympathy, support, and confidence so often expressed during my term of office. This association and experience have been to me a source of happiness and joy that will cheer me throughout the rest of my life. I am sure that I can bespeak the same consideration for my successor.

I should also like to give utterance to my warm feelings of esteem towards our loyal, hard-working, and efficient staff at Head Office and at all the Branches. We have a splendid organization extending from sea to sea, and that is being used to further the interests of trade and commerce throughout our glorious Dominion.

It is a time to build up and not tear down—a time for co-operation and not opposition—a time to stand to our tasks and not be found shirking—a time to act unselfishly and not be moved by greed—a time for national unity and not discord—a time to fight our battles bravely and not lose faith in God that right, not might, will soon rule all the world.

Two trawlers similar to the Castle Class N. D. trawlers were launched at the plant of the Port Arthur Shipbuilding Company, Port Arthur, Ontario, on June 8 at twelve o'clock noon. These trawlers are for the Department of the Naval Service of Canada, and the following is a general description: Length over all, 135 feet; between perpendiculars, 125 feet; beam, 23 feet 4 in.; molded depth, 15 feet 1 in.; net tonnage, 116.3; gross tonnage, 294.5. They are equipped with 1 triple expansion engine 12¾-21½-35 x 24 and 1 single end Scotch boiler 13 ft. 6 in. x 10 ft. 6 in., approximately 500 I. H. P. These boats have two masts; are schooner rigged and wireless equipped.

President Bulman's Plea for National Unity*

The Call of the Hour is for Service and Sacrifice, and the Members of this Great Association Must Follow the Lead of Their Sons Who Are Offering Life Itself that the Future Citizens of the Dominion May Live in a Country Safe Without and Clean and Prosperous Within

By W. J. BULMAN

President, Canadian Manufacturers Association

THE honor of being elected President of this great Association is a very high honor indeed. As stated this afternoon, I recognize it as not for me personally, but as a recognition of the branch of this Association that I have been identified with—the Prairie Provinces Branch. I was, perhaps, one of the first members of our Association in that part of Canada. In the early days a few only used to meet in Winnipeg, but now we have 515 members. It is my profound conviction that you could have found many there much more capable than I of following the great leaders of Industry, who in the past have been your presidents. To attempt to express for my fellow-members from the West and for myself, appreciation of this honor, is beyond my command of words.

In the West the heads of our budding industries all realize that the present time is the crucial one for industries in Canada. This Association's members all over Canada are a unit in gladly accepting any and every sacrifice necessary to win this war, yet we must not, owing to our patriotic feeling, be blind to the many attacks being made under the plea of war necessity upon a national policy that has made possible industrial development in our Dominion. I believe we of the West come into most frequent contact with these influences. We realize the menace and appreciate the importance of convincing the electorate of this country that the future of Canada lies in an all-round development, industrially and agriculturally, and not agriculturally alone.

Canada Wants Home Industry

We have with us in the West, many who would make of us all stockmen, shepherds and tillers of the soil, and place us in bondage to our enlightened neighbors. They would bring us to the condition of the poor Indian who had to pile up beaver skins until the pile was as high as the cast-iron gun before he could trade for it. Oftentimes the traders used to lengthen the barrel.

We want to make our guns for ourselves, not to trade away our natural resources. We stand for the right of the Canadian workman to convert into wealth here, every ton of Canadian ore, every Canadian tree, as well as cultivate every acre of Canadian land. We object to the transfer, for a pittance, of the raw materials of our country for the workmen of other lands to manufacture and ship back to us.

We are a none too numerous people scattered along the edge of a country containing one hundred million highly specialized people. They would be quite willing indeed, and glad to make our goods for us. It will take courage and infinite determination to nationally say, "No, we will make them ourselves. Come over if you will and help us, but make them at home we must and will."

Is it not true that we manufacturers, struggling to make interest on the capital employed, are all inclined to gather the

fruit rather than plant the tree? The strain of these times has demonstrated that we must think nationally. All the technical skill of this Association must be ready and willing to mobilize for the opening up and bringing to use of the great natural resources of Canada. Our Canadian workmen must have the opportunity latent in every ton of ore, every tree or farm, if we are to assure employment and comfort for the men who will return from France and for the new coming people who will surely follow them. Our Government must, and I am sure they will, so legislate that capital will respond to the need and open up mine and factory. The people of Canada must be led to use Canadian-made products, knowing that their dollar, still retained in Canada will circulate back to them after having played its part in the evolution of a great nation.

Employment Must be Provided

It has been said, and truly, that man is a tool-using animal. The acquiring of tools for Canadian workmen to turn our great natural resources into wealth should be another great thought of the Government. Those in authority, in looking forward to peace, should have in mind these great munition plants and make an effort to plan and steadily endeavor to induce their conversion so that they will produce tools of construction instead of tools of destruction.

There should be joy and satisfaction in Government circles at the very sight of a dollar being put into a manufacturing concern. Every encouragement should be given. We will have hundreds of thousands of city workers coming home from the risking of life itself for this country, and there must be the development that will afford them employment, comfort and happiness in their chosen occupation. We must never forget that it is our business and our duty to make Canada great industrially, that the men who make the real sacrifice in fighting this war, can come home to opportunities to earn a comfortable livelihood. They must not be forced to leave their country to find work.

Welding the Empire

Is this war the blow to hammer us together, or is it a blow to shatter us? We believe it is welding the Empire together. We hope and trust it will weld Canada into a nation. With great regret we see, at times, in parliament and press, a tendency to emphasize class, to fake up conditions that shatter and to stimulate class suspicion. All this must stop and in its place must come the effort to weld together all Canadians. For Canada, we must be impelled to co-operate, go together in the sacrifice of war and in the reconstruction of affairs when the war is won. This country of ours should be run, not by tired men, but by inspired ones.

We are expecting things from men from the ground, from the air, from one another, that we dared not expect before. Let us in every way help to realize our expectations. The child

* Speech delivered by Mr. Bulman at the annual banquet of the Canadian Manufacturers Association at Montreal, June 13, 1918.

is father of the man that is to give character to the state. The broadest ideals must be implanted in the child's mind. Who can do more to induce high ideals in the schools and in the minds of the teachers of our children than the heads of the great industries next door? If we love Canada, we must so think for her future and steadily work for Canada. The members of this great Association must follow the lead of their sons who are offering life itself that the future people of this Dominion may live in a country safe from without. The call of the hour is service and sacrifice. We must do our part to make Canada clean and prosperous within. For the redemption of democracy, we Canadians are pledged to give our all, that those who come after us to people the broad lands of this great Dominion may dwell in security and develop in peace. Our Dominion, rich beyond any land in natural resources, peopled by men and women who love good and hate evil, a land bequeathed to us by an ancestry whose moral motives and teaching have born fruit in the sacrifice for freedom we make to-day, is surely worthy of our greatest endeavor. Even amidst the heart-breaks and sorrows of these

times, let every man and woman of us thank God we are Canadians; that our children will grow up secure, surrounded by the greatest opportunities any children ever had in a land; safe without and clean and prosperous within.

Truscon Building Products

A small booklet entitled "Truscon Building Products in War Time," has been received from the Trussed Concrete Steel Co. of Canada, Limited, Walkerville. It contains a letter from E. P. Gardner of the English Company written to R. H. Page, manager of the Foreign Trade Department, telling how the company's products have been largely adopted by the British Government in the building of quarters, hospitals, storehouses, munition factories and structures of all kinds required for the war. The fact that the Government specifies these materials in contracts is a strong testimonial to their value.

SNAPPED AT MONTREAL



C. Howard Smith, chairman of the Montreal Branch and of the General Convention Committee



H. H. Champ, of Hamilton, the new chairman of the Hamilton Branch, Canadian Manufacturers Association



W. K. George, of Toronto, an ex-president of the Association, and now a Member of the Executive Committee

To-day's Industrial Problems and Obligations*

The First Thing Needed in This Age of Ours is a Realization and Understanding by
All the Factors in the Community of the Nature of Industry and of Its
Contribution to the Civilization in Which We Are Living

By JAMES A. EMERY

Counsel, National Association of Manufacturers, New York

MR. PRESIDENT and gentlemen of the Canadian Manufacturers Association: It is very kind of you indeed, and very characteristic that you should welcome the stranger so warmly, not for himself but for what he represents. Of course it is very pleasant, no matter how conscious I may be of the lack of desire to face so warm a courtesy. It is in delightful contrast with an experience I once had in New York when, I remember, an amateur toastmaster, not a regular member of the Union, introduced me in a somewhat flabbergasted state by saying, Gentlemen, I shall not bore you with a speech, we have others here for that purpose.

Gentlemen, circumstances have brought us very close together. So close, indeed, that in the light of your courtesy I see in the face of every stranger not merely the features of a friend but the face of an ally. American manufacturers, could they speak their collective voice, would be glad of the opportunity that you give me to recognize and pay tribute to the skill, the efficiency, the resourcefulness of the Canadian manufacturer in these times of trial and peril. But more than that, we Americans stand with heads bowed, with hearts uplifted in the presence of the heroic valor, the invincible determination, the immeasurable sacrifice of the Canadian people. Without a moment's hesitation you cast upon the altar of civilization your whole future, not merely to make a world safe for democracy, but to keep democracy safe for the world, and I come with more pride than I could personally feel a year ago, because we have now ceased to be neutral and have become human. Gentlemen, we are no longer too proud to fight, we are going to be too proud to quit till we have peace with victory. We have learned the slow lesson, but a permanent one, that the murderous policy of a German submersible could never be overcome by the venal rhetoric of a Chautauqua submissible.

New Problems and Obligations

Sirs, this war brings to industry new problems and heavy obligations. With us it has destroyed, first of all, our most cherished topic of manufacturing discussion—the tariff. I perceive you still indulge in the recreation. When I heard the distinguished gentleman from Quebec, who, I find, is a member of the only bar left in the Dominion of Canada (laughter)—when I heard him present that abstruse legal problem which illustrated the French-Canadian of the beloved and unforgettable Drummond, just as keen as he who found the subtleties of the New England Yankee, I thought he was going to conclude, perhaps, in the light of yesterday's discussion, as a well-trained lawyer might, by giving protection to the cow and allow free trade in the milk.

Gentlemen, we shall have, for a long time to come, if not forever, in the mutations of men, the problems of our age which will be peculiarly industrial problems, for we live in an industrial age. The world over which the legions of Napoleon tramped to victory and disaster in Russia, is a very different world from the one in which we live. It saw a Europe of independent, self-supporting agricultural states; to-day you see a vast group of interdependent industrial states, each support-

ing upon its soil a population far greater than it can feed, and does it because it has so marvelously enhanced its powers of production that it can support a population it can't feed upon the exchange surplus of its manufactured products.

Industry's Contribution

The first thing we need in this age of ours and in these mutual countries of ours, is a realization and understanding by all the factors in the community of the nature of industry and of its contribution to the civilization in which we live. Once understood, there can be no friction between the industrialist and the agriculturist, for the manufacturer is the unconscious partner of the miner, the forester and the farmer. It is he who is giving new values daily to their products and who, by the improvement of his own processes of manufacture and distribution, is continually cheapening and bringing within the range of every citizen of the country new conveniences and new comforts and adding new values to the raw material of the forest, the field and mine.

To notice fundamentals for an instant, just observe that one of the first facts of life in its most primitive, as well as in its most advanced stages, is that greatest of individual questions, the relationship between the wants of the individual and his capacity to meet them. And another lesson we must have learned early, because it is forced upon the race everywhere, is that man by direct labor gets little. He who depended upon his hand with the rude tools of the primitive state got little for much exertion. He who would win his way in the contest of life, largely speaking, must engage in a bitter contest with nature. Nature can be subjected to dominion, but it is harnessed and never tamed. It seeks at all times to burst away from the control of man, and he makes his progress exactly in proportion to his capacity to control the natural forces about him and to reduce them to subjection and vassalage. Industry has been the instrumentality of this conquest. The real test in any material civilization is the creation and maintenance of a constant, increasingly progressive, ratio between act and achievement, that it shall ever require less and less of the expenditure of human energy to produce the wants of man, and as it requires less of energy from him he has more leisure or more time to devote to planning and to devising and to improving rather than to merely living. Until we create surplus wealth and multiply and redouble it we have not at our command the means with which we undertake to develop and cultivate the finer and nobler things of human life. Without the surplus wealth which the manifold, multiplied powers of production give us there can be little art, there can be no literature, there is restricted learning and limited education. It is industry that lifts life from a contest for subsistence into a rivalry of accomplishment.

Experience of 100 Years Ago

One hundred years ago the great republic to the south was struggling for commercial freedom. It is amazing to think that a century ago the United States, taking its first manufacturing census in 1820, showed that its manufacturing

*Speech delivered at the annual banquet, Canadian Manufacturers Association, Montreal.

production for that year was exactly one half the amount that the great steel corporation paid yesterday in taxes. I say that not to boast of her, but to inspire you, and I say it, too, because the presence of that great fountain of wealth means so much more in the service of our common cause.

Industry, sir, has not been the mere production of commodities. Industry has been the inspiration of invention, of science, of continuous improvement. It has not merely made commodities, it has made tools; it is industry and the progress of industry that has made possible the advance of all the other handmaids of our progress; it has made the farmer's reaper and binder, it has multiplied his powers of production, it has even provided him with that most amazing of all vehicles that wears his trousers in a new place. It has done more than make cultivating tools, it has built the machinery and developed the engine that has made possible those changes in transportation that have revolutionized the political relationships of mankind.

Development of Navigation

Between 1880 and 1910 the improvement of the steam engine and turbine, and the application of new forms of fuel took one-third the sail power off the navigation of the sea; it cut the cost of moving a bushel of wheat from Chicago to

New York exactly in half; it reduced to one-fifth the cost of moving the same bushel from New York to Liverpool. That is thirty years of marvellous industrial progress. That was not the progress of an individual here and there but the stimulated movement of the whole mass, turning to the service of mankind the ingenuity, the industry, the skill, the technical knowledge, the trained labor of the masses of millions of men.

Value of Electrification

More than that, progressive manufacture to-day is not dependent upon the location of your plant beside a stream nor upon the uncertain power of the wind. We put our plant where we please, we take our power from the clouds or from the mountain stream; we transmit it where we would use it. When this great struggle is over and we turn ourselves again to the tasks of peace, to take into our effort the lessons learned, instead of wasting the economy of effort, what an amazing chance we shall have to develop new and unexpected sources of power. Why, gentlemen, the president of one of our greatest manufacturing corporations, the General Electric Company, told me recently that if we electrified the railroads of the United States we would not only save 150,000,000 tons of coal annually, but we would release for freight service of the nation forty odd thousand freight cars. That is but one single example.

Now, in the midst of this struggle we have been turning the industrial brain under the impulse of necessity upon new tasks of every kind about us. The German chemical industry held us in vassalage. Never again. We have exported from the United States in one month more dyestuffs in the past year than we manufactured in a year before the war. We are making as good optical glass in Pittsburg as they made in Munich. When we put our minds to it, gentlemen, it will require little effort to wipe "made in Germany" off the manufacturers' map.

The distinguished gentleman who preceded me has alluded forcefully and well to the necessity of co-operation in the development of your great commonwealth as in ours. We have one hundred millions of population, it is true, but our territory is so vast, our resources so great that we have but scratched the surface of our capacity to sustain men. The State of Texas alone could hold the present population of the United States and still have a space in one corner in which we could throw the German Empire and never find it.

The Manufacturer and the Farmer

Gentlemen, if we are to enter upon a new era of co-operation we must have new mediums and methods of making our minds meet. The difficulties in our conflict of interest are not only more imaginary than real but they are generally more stimulated than spontaneous. The manufacturer needs above all things to send missionaries out to give understanding to the farmer. Not because there is a conflict but because there is a harmony, a unity, a singleness of interest between them that needs only to be examined to be understood. It is equally true of the manufacturer's relation to his employee. These relationships, so important to social progress, require only the same attention, the same careful consideration that we give to the sale of our goods, the distribution of our wares, the study of new processes. That does not mean that in a civilization like ours, under institutions such as we revere and respect, we are to surrender the basic principles of social relationship to secure a peace founded upon a compromise of principle and a surrender of faith, but that we are to bring to the common understanding of men, the realization of the common interest of all citizens in the



Snapped at Montreal

W. J. Bulman, Winnipeg, president for 1918-19, conferring with T. P. Howard, Montreal, the new first vice-president

processes of production and in the recognition of the fundamental principles of all institutions applied to the individual relationship.

Victims of Our Vocabulary

Our greatest difficulty to-day is that we are the victims to a large extent of our own vocabulary and of the vocabulary of so-called social progress that so frequently carries with it a flag of challenge and ambiguity. Why, how common it is in discussing that most essential and delicate of all relationships, that between employer and employee, the partners in production, to talk about the conflict, the antagonism, the inharmony, the opposition of "capital" and "labor." How unhappy our terms. There cannot be any more opposition between capital and labor than there can be between the sun and its beam. Of course if by "capital" we simply mean money and we undertake to present a conflict between "labor" and "money," we are talking about an unintelligible thing. If we mean by "capital" a bank account, it is still more unintelligible. If we mean by "capital" an aggregation of riches and insist there is a conflict between riches and labor, I don't think we have added anything to the intelligibility of our discussion. What do you mean by "labor?" Are you going to permit yourself to enter upon any discussion of this great relationship by confining labor to the exercise of physical energy? The labor that lifts the world is every kind of human energy, it is the labor of the head not less than the labor of the hands, it is the labor of the mind not less than the body, it is the labor of all kinds of men united in common service that makes for the progress of civilization, and he is a small man indeed who permits the question of the great relationships between those who employ and those who are employed, between those who direct and those who operate, to be confused by the use of such terms as "capital" and "labor." Why, capital if it is anything at all is always conserved, economized, frugalized, saved labor. The first man never had a tool until he saved time enough to fashion it. Somebody had to work to provide him with substance in order that he could get the spare time to make either his first weapon or his first tool. When he had it he possessed capital for the first time, because nothing that you call capital is anything except the product of some kind of labor that has been saved over and above the amount of labor necessary for the sustenance of the individual who owned it. You cannot have any progress in the world, you cannot have machinery, you cannot have weapons, you cannot have libraries, you cannot have education, you cannot have literature, you cannot have art, you can't have civilization itself moulding into man's possession something more than that which he needs to keep the wolf from the door until you have saved labor enough to fashion these things, and that labor, in the form in which it may be used for future production, is "capital" in every conceivable form in which it is fitted to the service of labor. Least of all is money, which is merely the token of the wealth that has been economized. Granted then, gentlemen, you have capital and labor as the equations of your modern problem, give me a million dollars from the greatest bank in Montreal, give me a thousand laborers, can one fructify without the other? Is your million dollars of any use to the community? Are your thousand men able to do anything in this modern world until there enters into the control and direction and supervision of both the element of management? That alone places your thousand laborers and your million dollars in the service of the community; and are we to debate about which is the most important of the three when each performs its function? Well, if we are, then answer me this question, which is the most important leg of a three-legged stool?

One of the prices we pay for life in an industrial age is that we live in a highly specialized world in which each one



—B. and C. Press Photo

J. S. McKinnon

S. F. McKinnon & Co., Limited, Toronto
Second Vice-President, 1918-19, Canadian Manufacturers Association

Mr. McKinnon, who by his election to the second vice-presidency comes into the line of presidential succession, is a nephew of the late S. F. McKinnon, founder of the business of which he is now the president. Born in Blyth, Ont., in 1870, he was educated at Blyth Public School, Clinton Collegiate Institute and the University of Toronto. Commencing his business career in his father's drygoods store in Blyth, he came to Toronto in 1902 and entered the present establishment, rising in due course to be its active head. Mr. McKinnon has served as chairman of the Toronto Branch and has always taken a keen interest in Associated work.

performs his highly specialized task in the confident belief that every other element that contributes to this complex world of ours will do his. The price of industrial advance is interdependence. Our civilization is so finely and delicately constructed that a rude hand can easily interrupt that which only a skilled mind can start or originate. All the great mediums of production, of distribution, of transportation, all the children of this advanced mechanical age have only made us the more interdependent each upon the other, and by the size of the tools we have created for our use that are absolutely essential to the doing of the work of the modern world, because a great task needs a great tool; you couldn't do the work of the modern world with the tools of fifty years ago any more than you could dig the Panama Canal with a hand shovel. When you are going to have that kind of instrumentality doing the world's work, you have got to possess and train minds great enough to administer them. The world is more dependent now upon executive capacity of the first order than ever before in its history.

Importance of the Individual

Are we come of a people who believe in the individual? I believe in the individual because he is the dynamic force of the world. Nothing moves without him; society is a mere abstraction; society never originated anything, never in-

vented anything, never demonstrated anything, never manufactured anything. It is always the individual that invents, that directs, that manages, that distributes, that executes, that plans, that devises. It is a Haig that leads the army to victory, it is a Foch upon whom the world depends to hold the enemy back. Shall we be less courageous than they? Shall we face our social problems with any less confidence in our capacity to solve them? Shall we be less courageous to establish our institutions and preserve them intact than those men holding that thin line at the front? I remember when our aged Chief Justice, a son of France, had his plate set beside Joffre at the White House dinner for the French Commission. The whole company was amazed at the constant affection and interest between those two old men General Joffre and our Chief Justice, who is himself no mean soldier, for four years he marched in the Confederacy, and when the dinner was over the Solicitor-General said to him, "I saw how interested you were; what on earth did you and Joffre find to concern you so much?" Chief Justice White said: "He told me the story of the battle of the Marne, and I asked him, 'When did you know you were going to win?' He said, 'When I received the telegram from Foch on the morning of the great day saying: "My left is broken, my right is pierced, my centre is under attack, in fifteen minutes I advance."' When I received that message I knew such a man couldn't lose.'"

The Lessons of the Past

Now, sir, shall we face our tasks with any less courage than that? Have we spent a thousand years of English blood to learn the lesson of institutions built upon the moral sanctity of an individual life, and yet fear to face a future in which millions of men have fertilized the soil of France to make those principles secure? Do we fear a social problem to be solved by human thought when these men did not fear the least but offered their blood to stop him trampling upon the fields of civilization? Have we spent a thousand years learning in the slow processes of mistake, of study, the historical errors of a dozen dynasties, and many parties, in all the changes and mutations of a thousand years of English history and 140 years of our Republican experience—have we learned all that to throw it aside for the dubious experiments of a sociologist? Are we ready to put all we know by experience to the hazard of mere experiment? Are we going to face our future without any thought of the past? I heard a distinguished New York divine say at a great meeting in New York, "The past is dead, the future alone is to be faced."

Well I said if that is so, what are you doing here, for you have no Ten Commandments nor the Sermon on the Mount.

Gentlemen, we have had 140 years of civil government in the United States to learn the practical value of the protection of the individual in his labor, in the securing of that which he earns for himself and in the preservation to him of the opportunity to make his own advance and, in doing it, to make his contribution, to the society of which he is a part. If we have one hundred million people to-day it is because the experiment has worked, it is because the blood of many nations has found refuge on our shores and has found the reward for honest efforts, and because your people and mine have learned after all the centuries of experience that in the long run nothing wins but hard work and character. All that have been offered as substitutes for these intensely human things have failed in the test of time. What we need for the preservation of industry—and when I say preservation of industry I mean the future of our respective nations, because they cannot live without industry and industry

cannot live without them—industry, sir, is no separate, antagonistic distinct thing from the community in which it lives; it is its warp and woof, it is tied by the very roots of its being, it is the means by which we live, by which we perpetuate ourselves, by which we expand and develop; and if it was not for the fact that we did develop this enormously multiplied capacity to produce the necessities of mankind we would in this hour be helpless in the face of this great war machine, but it is because we have learned how to do things that we are going to be able to make our contribution, even though it be at the last minute, to the salvation of mankind.

Nationalize Industrial Thought

There are many great individual questions that could be referred to and discussed, questions of the greatest importance to the industrialist and to your own great community, but time does not permit of their separate discussion, but I beg to remind you as a final thing that your great task in Canada is educational. In the first instance; you have got to nationalize the industrial thought of the great Dominion, make your people realize the task that industry faces and the contribution it makes, make it understand your sincerity and your realization of the fact that industry cannot advance itself here or in my country except it renders service, and that service is not to itself but to the community. It cannot make its progress unless it betters the relations between management and men, not by surrender of principles that are rooted in any institution but by the protection and perpetuation of those institutions and by their popular acceptance, once understood. The working man, once the chance is given to him steadily and consistently, can realize that he is your partner, that you can't produce without him nor he without you, and that your own relationship, and your own difficulties but illustrate the old Roman story of the struggle between the limbs and the stomach in which you remember when the plebeians left Rome the aristocrats sent out their ambassador and he brought them back by that old time-worn fable, as true after these centuries as then, that while the stomach objected because the hands and the feet got the benefit of all it digested, the hands and feet pointed out it would have no means of locomotion if they didn't exist. Employer and employee are like the blades of the scissors, neither good without the other, both often moving in opposite directions, but coming together and frequently cutting the demagogue who comes between.

Personal Relationship in Industry

We need a much more personal relationship in industry. Our difficulties have come largely because management has been so concerned about its own tremendous problems of production that it sometimes forgets the human equation and the laborer has too frequently thought of the manager and management as one that is antagonistic and not co-operative with him. The advent of the great corporations has brought hundreds and thousands of men under the control of impersonal business organizations. You can't live life without the human touch. If you would exert your greatest influence in Canada exert it through your men, make your men understand you and do your part to understand them, and the combination of management and men will make Canadian industry irresistible in the performance of its gigantic task.

And now, gentlemen, let us recall that this is a great industrial struggle, it is a war that cannot be fought without industry, it is a war in which the non-industrial nation is hopelessly outclassed. Russia, long before she became a debating society, could neither produce what her people needed

or distribute what her Allies supplied her with. She lacked the industry without which an army of fifteen million could not be equipped or clothed or fed, and Russia to-day is illustrating on a scale so tremendous it seems as though Divine Providence itself had spread that lesson for the world to read. The Socialist has told you all he needed was the opportunity to demonstrate, to have wiped out the individual and submerge him beneath the social sea, that the panacea for all human ills was to be found in his system, and so they took this gentleman from the Bronx, appraised at \$12 a week in that community, and they have demonstrated what incompetence and incapacity and inexperience can do in the government of a nation. It is a lesson for all of us to learn, it is a lesson for the world to see, and it is a condition from which Russia must be saved, for men may talk anarchy but they never long endure it, and in their determination to secure stability and peace they have many times in human history fled into the arms of despotism and autocracy to find refuge from themselves.

So, sirs, we can face these problems that are common to both of us with the consciousness of our responsibility in dealing with them and with the realization that the things which we represent are the things that are contributing so greatly to the defence of the world to-day. Our far-flung battle lines are but the periphery of our defence. Great arsenals of preparation and production are found in every factory that is contributing its part to the equipment of those troops and to the production of those ships that are to bridge the seas, and when they shall have performed their task, the ships of your nation and my nation, let us hope we shall have the good sense to remember that no nation can build its future and depend upon the delivery wagons of a competitor to carry its goods.

What is Evolving from the Struggle

Out of this great struggle is coming something far more than material lessons, because it is crystallizing the finest and noblest sentiments of the human race. We have lived in a very easy world, we have lived in a very soft world. Now we are learning the great lesson that our forefathers learned in sacrifice and suffering, that there are things in life worth more than life itself, and we are flinging back in the teeth of the cynical world demonstration of the fact that wealth itself is not selfish but that it is ready to make its sacrifices, because the wealth of the world is being thrown on to the soil of France to save it from the devastation of the Hun. Has a man in your country or mine failed to make his sacrifice when called upon? On the contrary the men who have the most to give are giving it, and they are not alone giving their money and their service, but they are giving their soul and their spirit. Out on that far-flung battle line where the silent stars look down to-night upon your saviours and mine is being taught the lesson of a true democracy which rests not upon words, not upon sneers, not upon the false philosophy of the relationships between man and man, not upon the attempt to take from success and divide it with failure, not upon the determination to make the virtuous divide with the vicious, not upon the determination to make the successful the custodian and guardian of the unsuccessful, not to make character divide its own success with him who is without, but upon a far truer and far nobler and far more sublime democracy, the democracy of the son of the rich and the son of the poor, the democracy of the son of the laborer and the son of the manufacturer, of the son of the farmer and the son of the banker who fight to-night the world's fight shoulder to shoulder, comrades in the democracy of death for an endless victory for peace and a new world.

Development at Winnipeg

Board of Trade and Industrial Bureau Are Being Merged With Object of Forming Powerful Body

An American firm known as The Town Planning and Development Company, has made a contract with the Winnipeg Board of Trade and the Winnipeg Industrial Bureau to combine and reorganize these bodies on a broad basis. They are setting out to secure a membership of three thousand which, at an annual fee of \$25.00, will give the new organization a working capital of \$75,000 per year.

The new Winnipeg Board of Trade will act as a "big brother" to all civic and commercial organizations in western Canada under the plan adopted for the new organization



Snapped at Montreal

Alex. Marshall, manager Commercial Intelligence Department, and W. P. Hughes, secretary Montreal Branch

following the consolidation campaign. One of the special departments of the Board of Trade will be known as the Canadian Development Bureau, and its work will be to keep in close touch with commercial organizations in Winnipeg's trade territory, take the lead in bringing about a closer co-operation of western communities, and endeavor to secure concerted effort in the development of the West.

A secretary, specially equipped for such work, will be at the head of the bureau, and he will specialize in all activities that will promote this section of Canada. This will be one of the eight to ten bureaus of the reorganized Board of Trade.

In providing for a special Western Canada Development Bureau, the Board of Trade is adopting an idea that has met with wonderful success in several western cities in the States.

Inspiration from the Province of Quebec

What This Great Member of Confederation is Doing for the Cause of Education, Power Conservation, Agriculture and Other Important Undertakings Eloquently Explained by a Member of the Government of the Province at the Annual Banquet of the Association

By HON. WALTER MITCHELL

Provincial Treasurer of Quebec

MR. CHAIRMAN and gentlemen: When I was invited to come here to speak to-night I was told that General Mewburn, the Honorable Judge Doherty, Mr. Emery and Sir George Foster would speak before me, and that everybody wanted to get away by 10.30. Consequently I thought that my task was going to be a very simple one. However, on arriving here to-night I found that owing to unforeseen circumstances, the Federal Ministers at Ottawa were unable to be with us. I am consequently pushed up into the front trenches and asked to take my place in the battle line. It recalls to my mind an incident that happened—it was not in this country—the other day. Two brothers were discussing the question as to whether they would go to the front or not. One of them said that he wasn't going to go and fight. The other fellow said, "Well, Uncle Sam will make you go and fight." The first retorted, "Uncle Sam can't make me go and fight," to which the second replied, "Uncle Sam can't make you go and fight, but he can send you over where the fight is going on and then you can use your own judgment."

A Tribute to Quebec

Now I am here and I am over at the fight, so I am going to endeavor to use my own judgment and not run away.

I want to thank you, Mr. President and gentlemen, for the very kind invitation that you have given me to be present here to-night. I know it is not to me personally that that invitation was sent, but it was sent on account of the Government to which I have the honor to belong. I accept it, however, in the name of the Government, and I thank you, sir, for the opportunity of meeting the manufacturers, the industrial representatives of all Canada, the men who are carrying on the commerce of this great country. I am happy to meet you here to-night and I welcome you from the other provinces particularly to the City of Montreal and the Province of Quebec. I may say that we will always welcome you at all times and on all occasions as one good Canadian welcomes another.

I am delighted to see that you have extended your sphere in so far as choosing a president is concerned, and if I can be any judge of your new president by seeing him in action for the few moments I have seen him to-night, I think the Canadian Manufacturers Association have chosen truly and well.

Applauds Co-operation

I was reading in this morning's *Gazette* the remarks of your past president, Mr. Parsons, my good friend Senator Nicholls and Mr. McKenzie, who comes from the western country. One thing that struck me in reading those three speeches was a sentence particularly that was used by Mr. McKenzie in dealing with the difficulties that seemed to exist heretofore between the manufacturers and agriculturists, when he said, "Let us meet in Winnipeg and let us discuss. I was almost going to say 'fight.'" Gentlemen, I have always been a believer in co-operation. I have always been a believer

in compromise and I think the word "discuss" was much better than the word "fight," and I think the sentiment that was expressed by your past president and by Senator Nicholls and by Mr. McKenzie is a sentiment that should be adopted by all true Canadians on all questions, that is, co-operation, compromise in all things at all times. I do not believe, as great as you the manufacturers are and as all good Canadians know you are; I do not believe, although you have done wonders for Canada, that you can get along without the laborer. I do not believe that the laborer can get along without you, and I do not believe, Mr. President, that either of you can get along without the farmer. You use, you consume what he produces, and he uses what you produce. So I say in common with those gentlemen who spoke yesterday, meet by all means, whether it be in that great western City of Winnipeg or wherever it may be, meet and discuss and see if you cannot arrive at some basis of co-operation between you and them, and in that way proceed to build up this great common country of ours, which we all love so well—the Dominion of Canada.

I am going to tell you with your permission another story in order to illustrate what I mean by co-operation and what I think you want to avoid. When I first started to practise law I had a chap come in one morning and he said that, along with one of his friends, he had bought a cow. It appears that after they had bought the cow, the other fellow contended he owned the back end and my friend owned the front end. This meant that he had to do all the feeding and the other fellow took all the milk. I had only practised a few days and I didn't know much about how to divide that cow up, so I told them that I thought it was a matter of settlement. That is a way we lawyers have when we don't know what to do. I advised him I thought it was a good matter to settle. So he went away and I didn't see him for some time. After a time I met him on the street one day and I said, "Well, did you get that case settled about your cow?" He said, "Well, not settled exactly, but I got ahead of the other fellow." I said, "Yes, what did you do?" He said, "I killed my end and his end died."

Unity and Honest Endeavor

Now, gentlemen, that is not the kind of co-operation we want. We want unity. We want honest endeavor. We want good will between you, the manufacturers and the laborer and the agriculturist, and we want in addition to that unity, co-operation and common action between the different Governments of this country, and between the Governments, the manufacturers, the corporations and people in order to make a success of the great problems that we have before us in this country. And I as the representative here to-night of one of those governments would like with your permission, Mr. President, to tell you of a few things that we feel we have done in the Province of Quebec which will be of assistance to you not only as manufacturers, but to all

the people of this great province, in strengthening this province, thereby strengthening one of the principal links in this great confederation.

We have in the Province of Quebec endeavored to conduct our Government on good business administrative lines; we have endeavored each year to spend a little less than we take in as revenue. We think that is good business. I was talking to one of your prominent business men in Montreal the other day and he was saying how glad he was that we had been able to pull through each year with a small surplus, and I told him I should not get that from him as a business man, because every good business man knew that in order to make for success in any business, in order to make for success in the administration of affairs, the only thing to do on sound, sane business lines was to see each year you spent a little less than you took in. If we take in a little less next year owing to the prohibition movement in the Province of Quebec, we will have to spend a little less on something else, but I can assure you gentlemen who are interested particularly in the Province of Quebec that, when the end of the first fiscal year comes after prohibition goes into force, the Province of Quebec will keep the long line of surpluses that they have had since 1897 and we will be able to maintain your affairs on a sound business basis, prohibition or no prohibition.

Quebec's Finances

The revenue of the Province of Quebec is about ten and a half million dollars. Our annual budget of expenditure amounts to about that sum. Last year we were able not only to pay the ordinary expenses that we have to pay and make considerable grants to the great public services of education, roads, agriculture and colonization, but we were able to expend a million dollars or make a donation of that sum to the Patriotic Fund, which we paid out of the ordinary revenue without the necessity of borrowing, and after doing that still had a surplus of one hundred and fifty odd thousand dollars.

The debt to-day in the Province of Quebec is \$14.09 per capita. The debt when the present Government came into power—and I am not discussing parties in this matter because the Liberal administration has been in power since 1897—but in 1904 when the present Government came into power the debt per capita was \$15.63, so that we have reduced it by \$1.51. We have accumulated during that period some six million dollars of a surplus. The question is neither here nor there except as a question of administration. The thing that I always think the people of this country, the business men, laborers, farmers, ratepayers, are interested in is not so much the question of how much money do you get, as, do you properly spend the money you do get? I invite criticism of the Government in so far as the expenditure of that money has been made, because we feel that we have spent the money in the interests of the ratepayers, in the interests of all the people in this great province. We have spent enormous sums on education, and I am sure that there is no man within the sound of my voice who would not say, as I myself would say, if we could spend double as much upon education it would be money well spent.

Spent on Education

When the present Government came into power the annual expenditure for education was \$480,760. Last year our expenditure was \$2,124,000. Since the year 1904 we have spent in the interests of education throughout the province the sum of \$15,299,000. And, as I say, if we could get the revenue and if we had the money to spend we would spend it willingly and gladly, and I am sure you would agree with

me, we would spend double the amount for the purpose of properly educating and bringing up the young generation who are going to be the men and women of to-morrow.

But in dealing with this question of education I do not feel that I should pass by one phase of the question which it seems to me, Mr. President, is of particular interest to you as manufacturers, and that is the question of technical education. We have during the last seven or eight years built upon Sherbrooke Street—those of you who live in Montreal are familiar with the institution—the Montreal Technical Institute. The Government of Quebec guaranteed the bonds of that institution to the extent of \$700,000. Since that date we have made an annual contribution of \$40,000 per annum. We started out with that institution with only a few scholars, but the number has grown from year to year and to-day we have some 800 pupils there, men being trained to take their proper place in your great industries.

We have not only established that institution there, but we have also established one at Quebec City, where we have guaranteed bonds to the extent of \$500,000, and where we make an annual grant of \$30,000. We have established one at Three Rivers and guaranteed bonds to the extent of \$150,000 and made an annual grant of \$10,000. We have established one at Shawinigan where we make an annual grant of \$5,000. We have established a small one at Sherbrooke, but now there is a demand for a larger one and we are going to give it to them. We also have a request for one at Sorel, Fraserville, Drummondville, St. Hyacinthe, Granby, and St. Johns. You can see the demand of the young men of this province is for technical education, and it seems to me that you as manufacturers must be interested in our educating our young to be able to take their proper place, as I said a moment ago, in the great industries of this province.

The Extent of Quebec

Did you ever realize the area, the extent of the Province of Quebec? Yesterday or the day before I picked up a magazine and I read there an article about the area of the Province of Quebec which I didn't believe, but I had the figures checked up this morning, and I find that the article is absolutely true, and I am going to read it, and if it strikes you as it struck me you will certainly be impressed with the size and area of this great Province of Quebec. The area of Quebec is 703,653 square miles or 462,000,000 acres, that is 18 per cent. of all Canada, but here is the article to which I refer: "This enormous extent of territory can be better understood when it is remembered that the Province of Quebec is not only the largest of all the Provinces of Canada, but is about twice as large as Ontario or British Columbia, nearly three times larger than Alberta or Saskatchewan, twenty-five times larger than New Brunswick, thirty-three times larger than Nova Scotia and Prince Edward Island. It constitutes one-fifth of the whole area of Canada, and is almost one quarter the size of the United States of America or Australia; it is about three and a half times larger than Germany, France and Spain, and six times larger than Great Britain and Ireland."

As I said I didn't hardly believe it, but when I had it checked up I found the article was accurate except in one statement it made as regards Manitoba. The writer had forgotten to take into consideration the fact that a few years ago the territory of Manitoba was enlarged. But when you think you have got this great extended territory—true, there may be some of it that we may not be able to use—but I can assure you from the reports we have, when we think that we have in this province one hundred and thirty million acres of forest lands uncut, 130,000,000 acres of forest land of timber wealth, out of a total of 600,000,000, British

Columbia coming next with 100,000,000—when you think of that, gentlemen, I say that you manufacturers and representatives of capital in this country have a great task before you, and we of the Government of Quebec invite you to co-operate with us in developing it.

Have you ever considered the fact (I am sure you have) that the population of this province is only 2,000,000 extended over this vast territory? And when considering the population of this province, the same thing applies and probably more so, when you take into consideration, the whole Dominion, that is, we only have 8,000,000 people in this great country, which is as big as that great Republic to the south of us where they have 100,000,000 people. Do you know what that means, gentlemen? It means that some policy must be—who used the word “inspired” here this evening?—some inspiration must come to some mind to invent some way of getting settlers in this great country of ours in order that we may develop this great territory. That is a task for Governments, Federal or Provincial; that is a task for you the manufacturers, and that is a task for the whole Canadian people, and after this war we will need more than ever.

But in considering the fact of the development in this province there is one feature of it that I would ask, Mr. President, to be allowed to call to your attention, and that is the water powers of the Province of Quebec. We have in

the province developed at the present time 520,000 horse-power. That is not 10 per cent. of the total horse-power available in this province. That means to say we have six million available horse-power in this province of which only 520,000 is developed. Again I invite your co-operation, and remember in these days of the shortage of coal this will be the white fuel of the future, and I would like to show everyone in this room what some of our great power companies have done in the development of the St. Maurice, and what we have done, and the effect of the development of those water powers. There you have Shawinigan, Grande Mere, and up in the north these towns thriving with industries that have been unheard of before in this country, and I may tell you on a visit there last fall the President of the Shawinigan Water and Power Company assured me they were manufacturing certain articles there at that time that had never been manufactured anywhere before on this continent, but had always been heretofore manufactured in Germany, and he said, we have come into the market to stay.

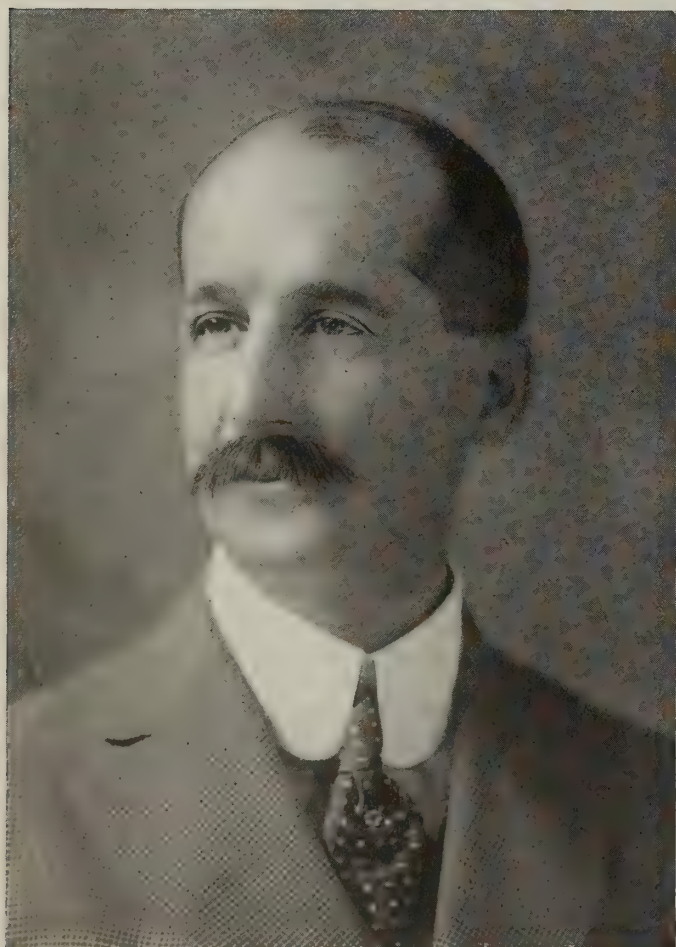
Conservation of Power

In order to develop, to help and assist in this work we have built at La Loutre, a few hundred miles north of Three Rivers, what is known as the La Loutre Storage Dam. We are spending there about two million dollars, and by an arrangement with the existing water powers upon that river we are going to be able to pay the interest charges and sinking fund upon that undertaking; not only do that, but have a revenue for the province in addition. So that we are going to carry on as a business undertaking in the interests of the manufacturers of that district this great undertaking of storing water at the head of the St. Maurice at a profit for the province and for the manufacturer and for the people, and at the same time going to double the capacity of the water power upon that river. That means that it doubles the capacity of the Shawinigan Water and Power Company's installation which heretofore had a capacity of about 100,000 horse-power which means that they are going to have 200,000 horse-power. The same thing applies to Grande Mere, the same thing applies to La Loutre, and the same will apply to six or seven other fine water powers which are there waiting for you gentlemen with capital to develop, and again I ask your co-operation.

We have carried out the same programme on the St. Francis; there we are expending a smaller sum because the water powers are not so great, but again we are doubling the capacity of the water powers upon that river at a profit to the manufacturer and at a profit to the whole district through which this river St. Francis runs, and at a profit to the people of the province. At the last session of the Legislature we were authorized to establish another water power on Lake Kenogami, another on Jacques Cartier River, and another on St. Anne's River at an expense of about \$2,000,000. These are works which we think are being carried on in the interest not only of the people of the province, but in the interest of you, the manufacturers, because the more we develop water powers the cheaper is going to be your power, and I am sure that I will find no dissenting voice when I say we want cheap power in the Province of Quebec.

Helping Production.

Now only one more point and then I am going to close. I do not think I should sit down without saying first of all that we are spending day after day, particularly this year, enormous sums of money in aid of production. We have spent during the last ten years about \$5,000,000 in helping the farmer to produce more; but during last year the Federal Government made a grant of \$60,000, and we have



—B. and C. Press Photo

C. Howard Smith
Howard Smith Paper Mills, Limited, Montreal
Chairman, Montreal Branch, C.M.A.

Mr. Smith is a native of St. Johns, Que., where he was born in 1873, his father being engaged in the newspaper business. After receiving an education at the St. Johns High School, he became associated with the paper trade in Montreal and Toronto. A few years ago he established the Howard Smith Paper Mills and is to-day one of the leading manufacturers of high-grade papers in Canada. Mr. Smith is also president of the New Brunswick Sulphate Fibre Co., and director of the Federal Paper Co.

added to that another \$60,000, so that in addition to the ordinary grants that we usually make per annum we are going to spend \$120,000 for the purpose of more production. We have divided the province into forty-one districts, and we have started a campaign which I am told is going to mean a wondrous increase in production. I do not want to trespass upon the aspirations and hopes of the Minister of Agriculture, but if it comes true I will come with great pleasure before the people of this country to say what the Province of Quebec is doing for agriculture. We are not only doing that for agriculture, but spending enormous sums on roads throughout the province for the purpose of aiding transportation; in helping the farmer with our good roads we are helping the cities because it lessens the cost of transportation from the country to the city. We have spent \$18,000,000 during the last seven years in this province in the constructing of highways; we have built 2,000 miles of macadam and gravel highways. In New York State, with a population of 9,000,000, they have only built 8,000 miles during the same period. We have built in this province 2,000 miles, which is equal to all the roads constructed in all the rest of the Dominion during the same period. I say that in no spirit of comparison but in order to inspire our sister Province of Ontario and our western provinces to continue in that and to start the policy which we have adopted, because in that way you are cheapening transportation, and in cheapening transportation you are lessening the cost of living.

The Highways of Quebec

Allow me to say this, that Governor Whitman, of New York State, has stated that by the expenditure of \$150,000,000 in the State of New York upon highways they increased realty values along those highways to the extent not of \$150,000,000, but \$382,000,000. I don't go that far, but I say that in the Province of Quebec, where highways have been built, where our municipalities have taken advantage of the good roads, that they have increased the value of the realty along those highways anywhere from 35 to 50 per cent. I also want, providing we can get the money, to continue on that policy in this province so that we will have all over the Province of Quebec highways which will not only be a credit to the province but of service to the farmer and a delight to the motorist of the city; and when you are considering that fact, you gentlemen of the City of Montreal, don't forget the City of Montreal does not contribute one cent to the maintenance of those roads over and above the ordinary tax which it pays into the local treasury, whereas in the State of Massachusetts, the City of Boston has to pay one-third of the cost of all rural roads, and whereas in the State of New York the Cities of New York and Buffalo pay over 60 per cent. of the cost of construction of all rural roads. We have never adopted that policy because we believe the farmer to-day can build his roads economically and make them as cheaply as he could heretofore, if he will only go at the thing methodically, and the way we advise him to go at it, and thereby increase the facilities of transportation.

Now, Mr. Chairman, I am going to terminate, but I do not feel that I should do so at this time without saying a word about the great conflict that is going on in the European battlefields. The thought that is uppermost in the mind of every right thinking man at this time is that our boys are fighting bravely and nobly for you and for me over there to-night. We must see to it that every effort is put forward by each and every one of us to assist in that great fight. We must remember devastated Belgium, we must remember the bravery of the sons of glorious France, we must remember the majesty of England and its unbeatable navy, and we

must not forget the representatives, 700,000 strong, and which in a few days will be a million we are told by the representatives of the United States Government, that are over there for the purpose of lending aid to those men who have held that line for four years, and let us pray to God that they can hold it, and hold it strong, as I have no doubt and as I am sure they will, until those brave Americans reach them.

Let us remember, Mr. President and gentlemen, that over one hundred years ago Nelson said, England expects every man to do his duty. To-day it is not England, but civilization, expects every man to do his duty, and when that duty has been done let us hope it will be an everlasting end to bloodshed and to war, and that the future generations will be able to live in peace and harmony, and that they can look back at us and say, they were brave ancestors who fought and bled for us to the death.

Vocational Education

New Brunswickers Are Very Much Interested and Want a Vocational Educational Board Appointed at Once

At a recent meeting of the New Brunswick provincial committee on vocational education held at St. John, a resolution was adopted urging the board of education to appoint at once the vocational education board, in order that the various school boards may take advantage of the provisions of the new law.

Those present were Fred Magee, M.P.P., chairman; Dr. J. Roy Campbell, M.P.P.; Rev. Fr. Tessier, of St. Joseph's; J. T. Jennings, of Fredericton; A. M. Belding and the secretary, Fletcher Peacock.

Mr. Peacock reported that enquiries had been received from the school boards in towns in all parts of the province relative to the act, and various boards had appointed committees to arrange for having the act applied next winter. In view of the fact and the action of the Canadian Manufacturers Association in appointing committees in the various towns to aid in making the act effective, the committee felt that no time should be lost in constituting the vocational board for the province and giving a head to the whole movement.

Dr. Campbell very strongly expressed the view that some of the outstanding leaders in vocational training such as he met when visiting Massachusetts should be brought here to arouse the interest of our people.

Mr. Magee expressed the hope that this might be done during the next session of the legislature, and an education day observed by the members; and in this Dr. Campbell heartily concurred.

There was a general discussion of the best means of arousing interest and getting results, and some discussion also of the situation which has compelled the board of education to reduce the age limit for student-teachers at the Normal school.

Communications received from other provinces and states show that the action of New Brunswick in making provision for vocational training is regarded as a progressive and important step. The following letter from R. O. Small, deputy commissioner of education in Massachusetts, is a sample of a number received by Secretary Peacock on receipt of copies of the report and the bill:

"I want to congratulate you upon the thoroughness of your piece of work and the scope of your act. It is very heartening to us to know that the province of New Brunswick has such a progressive attitude toward the matter of vocational education."

A Year's Work in Industrial Research^{*}

Some of the Results Achieved by the Advisory Council on Industrial and Scientific Research in Solving the Pressing Problems of the Day—Utilization of Waste Tobacco, Production of Straw Gas, Briquetting of Lignites and Other Undertakings are Described and Other Proposals Outlined

By PROFESSOR A. B. MACALLUM

Chairman of the Advisory Council on Industrial and Scientific Research

MR. PRESIDENT and members of the Canadian Manufacturers Association, this is the second occasion on which I have had the privilege of addressing you. I was present at the Winnipeg meeting of the Association, held in June of last year, and on that occasion I outlined the work that the council was called into existence to perform. I indicated then some of the lines on which we proposed to proceed. We had then only been in existence for four or five months. We were just feeling our way. Perhaps that is not the right expression to use. We were a little bit rash, considering what other research councils had attempted to do in that time. The British Research Council had been in existence over a year before it had formulated any plans at all. They were feeling their way; they didn't know how to proceed, because the problem was so vast and the methods to be adopted to get to the solution were more or less in a nebulous condition. Now, we on the other hand plunged right in to the work without any hesitation, and under other circumstances it might have been considered to be very great rashness on our part to be so ready to formulate our policies and our methods. Sometimes action like that is just the thing that saves the day. You all know how the Canadian line at Ypres hung in the air. It wasn't military—I mean it was not in accord with military science—what they did. They held out. The Germans thought that they must have an enormous force behind them, and the consequence was they stayed their hand until the French brought up reinforcements. Under ordinary circumstances that force might have been wiped out, but it saved the day. It was just that rashness of course that was suited to the occasion. Now, with us we thought at the time that our rashness might be justifiable, and I think it is justified now. We have taken measures, I think, which are to a certain extent beyond the comprehension or at least on the line in which a large part of our constituency will fail to bring us support, and it is for that reason I avail myself of opportunities like this to come before you in order to make clear that we are really going on the right line, although it may not be so clear to you or so clear to the general public.

Summary of Results

The results of our activities are to be indicated in my annual report that is now in the printer's hands. It was presented to Parliament just before it adjourned. The report is for the year ending 31st March, 1918, that is the end of the Parliamentary year. It is our first report, but I think when you have read it you will consider that we have not been remiss, we have been doing our best, and we have put forward problems and propositions which are really worthy of the activities of the Council and of our trust. I may say that the members of the Council have worked very arduously; members have given over their purely academic duties and all their spare hours, and it has been with them a labor of enthusiasm of the highest and most disinterested type. This report is long and I cannot summarize it, or I cannot do

justice to it by any summary, but I propose now to indicate, in the briefest form possible, because I know your time is precious, what we have done and what we propose to do. Our first effort was to take the existing situation as its urgency immediately demanded and propose measures for it; then the other was to formulate a policy for the immediate future because the future is the next few weeks.

Fog Signalling

We took up the question of assistance to industrial research, and I want to read over a number of things we have done—already. We have given grants for fog signalling. You know the handicap that fogs make for navigation in the Gulf and River St. Lawrence. You do not know of course that there has been no investigation of the penetration of fogs by sound nor the proper adjustment of sirens and fog signalling apparatus for that purpose. We made a grant, and very important results have already been achieved, and it is possible now to know how to adjust a siren to the work that it has to do. All sirens in the future will be adjusted to meet the principles which this investigation has formulated.

Then we have also taken up the condensation of tar in the destructive distillation of wood coal such as is employed for making gas, the condensation of that tar as it passes over the distillate, and condensation by means of electrical processes. It has been found that what is known as the Cotterill process, which involves the application of an electrical charge to the dust in cement works, has resulted in condensing the potash in the dust that comes off in the chimney stack, with the result that this potash is an important source of the supply that now finds itself on the market in the United States; and there is one plant down at Riverside, in California, which we are informed sells the cement as a by-product and the potash as the main product—sells the cement for fifteen cents a bag, which was an enormous reduction in the price charged before this process was employed. That electrical precipitation we thought could be employed to condense the tar in this destructive distillation, and we gave a grant for that purpose, and that research is now finished and a report will be presented upon it, and it is proposed, I understand, by one or two firms to employ the methods which this investigation has shown to be valuable in the precipitation of the tar in these plants.

Utilization of Waste Tobacco

Then again the utilization of waste tobacco. Waste tobacco in enormous quantities has been either destroyed by combustion or thrown away or used as a fertilizer. The nicotine that it contains or that is in it was unknown as regards the amount. We were asked to determine whether it would constitute an important source for this compound. Now, nicotine is used by gardeners and agriculturists for the purpose of poisoning plant parasites, and when the war broke out it was very scarce. We undertook this investigation, and we found out that waste tobacco contains about 2.40 per cent. of nicotine, and is therefore a valuable source of nicotine.

^{*}Address delivered before Annual Convention, Canadian Manufacturers Association.

We found out also it is an important source of potassium, about seven per cent; 140 pounds per ton of waste tobacco is constituted of potash. This waste tobacco therefore is a source for potash and for nicotine, and the nicotine can be extracted. It is not a difficult process at all. Unfortunately there is no waste tobacco now; you are smoking it in your pipes and in your cigars, and there is therefore no possibility of getting any waste tobacco for the manufacture of nicotine or potash.

Then again we took up the sulphite liquor that the pulp mills produce. Professor Goodwin has dealt with that fully, and I don't propose to go into that more than to briefly mention one or two points. Somewhere under two per cent., and possibly in cases as much as two per cent. of the sulphite liquor is fermentable sugar. That sugar can be converted into alcohol. There is about eight per cent. more of material which may be described as tar or pitch that is used for tanning. An enormous quantity is now being condensed of this sulphite liquor and transported to the United States to be used in the tanning process. We have given a grant for that, but particularly with regard to the fermentable sugar, and we had endeavored to get Canadian pulp companies to put in plants for the manufacture of alcohol for industrial purposes.

Then again we have given a grant for straw gas on the western plains. There are somewhere between twenty and thirty million tons of straw from the wheat fields of Alberta and Saskatchewan which are wasted every year; they are burned. Sometimes in September and October one sees the sky line all one blaze with burning straw. That straw is an organic product that ought to be used, and it was proposed by Professor McLaren and some others of the University of Saskatchewan that it should be used for fuel or for making gas to be used on the farm homesteads. A grant has been made for that purpose, but we have not reached any results yet because it has been impossible to get the steel required for the demonstration plant we proposed to instal on a farm. It has been done; this proposal has already been undertaken and so at least there has been partially demonstrated the utility of it, and we propose to have it demonstrated commercially. If we succeed, every farmhouse in Saskatchewan and Alberta may, for a small sum, three or four or five hundred dollars, have a gas plant which can furnish it with gas for heating and lighting purposes throughout the year.

Then we have made a grant for wheat breeding, to breed a variety of wheat that will resist rust. About \$30,000,000 a year of wheat is lost on the western plains because of the rust disease. There are certain varieties of wheat, not perhaps suited to our climate, that can resist rust. Biologists believe that it is possible to produce a variety of wheat that will resist rust, and therefore wipe out this annual loss. We have given a grant for that purpose, and a biologist associated with the University of Saskatchewan is now carrying out the work. We have given a grant also to utilize the tar sands of northern

Alberta. There are about fifteen hundred square miles of tar sand near Fort McMurray, north of Edmonton. This tar is of unknown amount, but we believe, from all the indications, it is at least four feet thick throughout all those fifteen hundred square miles; it runs anywhere from eight per cent. of tar to almost purity, and this tar therefore could be used, if we could separate it, for industrial purposes, road-making and so on. It has been used even as it is on streets in Edmonton for three or four years and it is found to be extremely serviceable, as good as any they have laid down. We made a grant for that. We didn't definitely state the amount, because we didn't know what it would involve, but there was to be practically a blank cheque for it if the men could be got.

Now, here I touch upon a subject that Professor Goodwin has referred to, the scarcity of men in this country who are qualified to take up that work. It is impossible for us to get them; that is why the research is delayed. It means the co-operation and association of some half-dozen men at least, chemical engineers and chemists, and we have not been able to get them. Then again, we have given grants for the

extraction of benzine and toluene, particularly from coal gas. Coal gas from our town gas plants contains a quantity of benzine and toluene. Toluene is very valuable, benzine is not; it is a drug on the market to-day until we can utilize it. There are about 35,000,000 gallons of benzole produced every year, and we have no way to-day of using it, at least beyond a few small lines of application. But toluene is very valuable, it is used in making T:N:T. We have made a grant for that, to investigate how to extract or to estimate the amount of toluene in it and how to extract it. That research is already finished and new methods of estimating have been devised, methods which are now employed in England for that purpose. The instruments so used have been sent across, and I believe they are now being used by the Imperial Munitions Board for this purpose.

Then we made a grant for forestry studies. You know our forest wealth is very great. It is one of our greatest resources, but it will soon vanish unless we take measures to preserve it. We have been mining our forests, not harvesting them. It has been estimated that if the American methods were employed in Canada for the utilization of our forest wealth, it would only last about twenty years; our forest area would be swept clean. We are approaching that result by our present methods, not perhaps in twenty years, but within the lifetime, perhaps, of the youngest of us. We do not know, no measures have been taken; there has been a great deal of talk about re-forestation, but no definite scientific measures have been taken because we do not know the basic ideas, the basic data; we haven't got them. We do not know the rate of growth in the reproduction of our forest trees. It is true that they know the data on this point covering allied species of forest trees in Europe; there they have made a careful study, but the climate and



Snapped at Montreal

Major L. L. Anthes, of Toronto, chairman of the Toronto Branch, C.M.A.

soil is different, and to have any value we should have to study and apply these data to Canadian conditions, and the first thing to do, therefore, is to find out the rate of reproduction and the rate of growth. Now, we made a grant to the Forestry Branch of the Department of the Interior of \$6,000 to begin the study of this last year. They are now working at the subject. Again we have made another grant, and we hope to have, in a few years, perhaps four or five years, enough data to enable us to formulate a method regarding reforestation and thus prevent the depletion of our forest wealth.

Then we have taken up the question of the utilization of our own fuel. We have an enormous quantity of fuel in this country. We have one-sixth of the world's supply of coal. Ninety-eight per cent. of it, however, is in the West, only two per cent. in Nova Scotia and New Brunswick. The other ninety-eight per cent. is largely of a kind which we have not yet learned to utilize. There is anthracite there at Bankhead, in the National Park district; there is anthracite up north at Hazelton, in British Columbia, very inaccessible, and with a large quantity of ash; and there is anthracite away up farther in North Saskatchewan, inaccessible. Anthracite to the extent of 533,000 tons was imported into Manitoba and Saskatchewan in 1916 as domestic fuel. You know the fuel situation in this country; I need not dwell upon it, but those of you who are from that district know the urgency regarding domestic fuel. It is a burning question out there in more ways than one. There are forty thousand domestic furnaces in that district which may have to be scrapped if they can't get fuel of a certain type, a type like anthracite.

Utilizing Western Lignite

We know that in those two Provinces of Alberta and Saskatchewan, the great part of the fuel is of a poor variety; it slacks. That is, within six weeks after it is mined and exposed to the air, it crumbles to dust, the greater portion of it, and as such it cannot be used. The reason of that slacking is the quantity of water it contains, somewhere between twenty and thirty-seven per cent. When that water goes it crumbles to dust. It cannot be used in domestic furnaces in its presently mined form. It is not a good fuel. You have to frequently stoke. The quantity of water that is in it carries off a large portion of the heat. You can't make coke out of it, it won't stand up to make coke. If you could make coke you could get a substitute for anthracite in that way.

The proposal that was made to us was to convert these poor fuels, these lignites, into a substitute for anthracite. The fuels that are nearest to the East are of a very poor kind, but there is an enormous quantity of them. It is estimated about fifty-seven billion tons of poor lignites exist in Saskatchewan and Alberta. Now, these lignites are easily mined; you have only to scrape off in some sections the top of the soil in order to get at beds and strata from four to ten feet and even thicker. These lignites are good for power purposes. There is no necessity for considering any change in them for that respect. I have seen them used. For a self-feeder grate you can employ these lignites without further change. It doesn't matter whether they are slack or not, or freshly mined or not, they make a splendid fuel for that purpose. But for domestic fuel they are unserviceable. That is the cause of the discontent in Manitoba and Saskatchewan now, for those who wish to get cheap fuel. Remember, to-day in Winnipeg western coal costs twelve dollars a ton. The coal from Lethbridge and Crow's Nest and Drumheller costs twelve dollars

a ton. It is not serviceable; it is not as good as anthracite and they don't want it.

The proposal made to us was to favor and support research on the conversion of these lignites into a form of domestic fuel which would replace five hundred thousand tons of anthracite imported from the United States. That is necessary. We must get some substitute for anthracite. The United States will some day close all the West and all the far East from the anthracite supply of the United States. It is getting scarce with them. They have only got about one hundred years' supply at the present rate, and if they increase the annual consumption it won't last seventy-five years, and they are getting anxious about it themselves, and consequently we will have to see how we can get on without it if they put an embargo on the importation into Canada of anthracite.

Briquetting Coal

We took up this problem. We found from previous experiments that these lignites could be carbonized. That is, all the gas could be driven off and all the water and the carbon residue could be briquetted. That was done on a laboratory scale and practically also on a super-laboratory scale, but it was not done on a commercial scale, and there was the rub. It was necessary for us to demonstrate it could be done economically on a commercial scale, and we proposed to the Government an appropriation of \$400,000. We asked for that sum to erect a plant which would turn out about 30,000 tons of briquettes a year at a cost, the maximum of which would be, it was estimated, about seven dollars a ton at the plant. Transportation would bring the price up, for instance to Regina, to Moose Jaw and to Winnipeg, but it would be less than the price for anthracite and it would be a better fuel. This briquetting would be carried out with the pitch or residue of those sulphite mills that Professor Goodwin referred to. We could find a use, therefore, for eight per cent. of the solid matter in the sulphite liquor that is now going into the stream. Although the Government was reluctant to undertake this, and I can quite understand why—you know they have many expenditures to meet and they have no Aladdin's lamp or Fortuna's purse, they have to be careful, and they wanted time to think over it, and they did—I was authorized by Sir George Foster to make some propositions. I must say this of Sir George, that he has been behind us in all the movements we have undertaken. He has been very hearty and very sympathetic in his attitude towards everything we have proposed. I make this tribute to him because I think he deserves it under the circumstances.

Governments Co-operate

I approached the Governments of Saskatchewan and Manitoba to share this expense, and those two governments have, I believe, consented to undertake a half of the whole and to work in co-operation with the Dominion Government in establishing and operating this plant. And that plant is to be erected and, if it is a success (that is only a small scale, thirty per cent.), other units could be introduced to reach one hundred thousand. Four or five such plants in Saskatchewan would supply all the substitute for anthracite that is wanted, and would, therefore, do away with the necessity of importing anthracite and exporting your money to the extent of about \$6,000,000 a year.

We made an investigation of industrial research sources in Canada. We sent out questionnaires and we got replies and summarized the data given, and we got an insight into the situation in Canada that is illuminative of the condition referred to by Professor Goodwin. Less than two per cent. of

the industries employ or have research laboratories, and there are not more than half-a-dozen that contain more than two men, and the majority of this thirty-seven only contain one man each. Compare that with the United States. In the United States it is estimated that more than four thousand research laboratories exist in connection with industries. Compare that with our thirty-seven. Less than \$100,000 a year is spent in assisting research in Canada in connection with the industries. We have been niggardly; we have been miserly. It is not only your industrialists who have been miserly, the Government has been also. I estimate the total cost of the research work carried on by the Government of Canada as less than \$100,000.

Need of Scientific Training.

The fountain cannot go higher than its source, or at least it could not in the past, unless we sent it up with dynamic pressure. We have found this out, and we have found that one of the greatest needs to-day in regard to industrial research is the great lack of scientifically trained men to take their places in the industries where they are needed. You have had some indications of that from Professor Goodwin's address. The number of men in laboratories to-day are far below what are called for. We have tried to remedy that a bit. Of course we have only been at it a year, but we propose to go on the line we have taken up and see what can result therefrom. We have instituted fellowships and studentships—a studentship of \$750 a year and a fellowship of \$1,000 or \$1,200 a year for young men who give promise of qualifying for scientific careers, either in pure science or in industrial science. We instituted twenty-five. We propose to raise that number as soon as it is needed to fifty, and then again to one hundred. We only allotted seven last year out of twenty-five; there were nine appointed and two resigned and went to the colors, and we are going to get two or three more. You see the situation from that.

We shall have to reorganize not only in this matter but also in the matter of the university. It is a long story, and you will hear about that, perhaps, if I happen to appear before you again next year.

We have also proposed to help the industries by enabling them to help themselves. A great many of the industries that do not employ research to-day cannot do so because they have not got the funds which will make it a success, or that will bring them the returns they want. A \$100,000 plant, with three or four hundred thousand dollars output, cannot afford to spend enough on research to make it worth while. There are industries in this country that are wealthy, and they ought to do more for research than they do, but the vast majority of the industries are of the modest type, and therefore cannot individually employ the funds to any good purpose.

Guilds for Research

Now, I propose, and the Council has adopted this proposal—we shall form in various lines of industries guilds for research. For instance, in a particular line there might be from thirty to fifty firms. Each of them cannot individually do much for research, could not with any hope of success, but those thirty or forty firms, by pooling their funds, can get a very respectable amount, say \$500 a year each. There is something like \$20,000 for research that can be of value to that industry. Of course that would not go very far; it wouldn't go far enough; it would be negligible by itself, because the guild that would furnish that fund would have to maintain and erect laboratories which would themselves cost a great deal. Now, we don't think that that burden should be imposed upon them. We think the Government should come to their aid, and we propose to have a central laboratory, a central re-

search institution, associated with which would be a series of laboratories to be at the disposal of these guilds, with free light, heat and accommodation, those guilds to pay their own staffs which they put in these laboratories, those laboratories to be used under conditions which will promote the best results.

With regard to the central institute itself, we have nothing in this Dominion of ours that corresponds with the National Physical Laboratory of Great Britain or the Bureau of Standards at Washington. We ought to have such an institution. There are Government departments at Ottawa doing something in their own particular line that fulfil some of the functions, but only a few of them. We should have something answering to the National Physical Laboratory of Great Britain or the Bureau of Standards at Washington. Now we propose, along with these laboratories for industry, a central research institute, which will take up all the functions of the Bureau of Standards at Washington and the National Physical Laboratory of Great Britain, this central institute to be liberally supported by the Government of the Dominion, which will also erect and maintain the laboratories for the guilds. The staffs of the guilds in the laboratories shall be under the supervision of the staff of the institute, and therefore there will be a co-ordination which will bring about best results. These guilds will have the benefit of the advice of the most expert scientific men in the Dominion, who constitute the staff of the institute. They will also be associated in some form or other with the research men in the various universities—the professors who are carrying on research in those universities.

I believe these propositions will carry. I believe the Government will give us a grant next year, a very large grant, to start the erection and maintenance of this research institute and of these laboratories, and within two years, therefore, we shall begin to see results. Where that institute will be I do not know, and I do not care, so long as it is founded and erected. In that institute I hope will be centred some of the keenest activity and work that this country can evince in matters of research and their application to the industries.

Financial Aid to New Industries

There are some other problems besides these that I might refer to that are now being discussed by the Council I have referred to and one of them is, how can the universities be made to do more than they are doing? That is a large question. Another one, and of course I do not wish to dwell upon it, but we are thinking of it, and of a number of other things like that which require thought and consideration before we put them out before you—another is the question of financial aid to new industries starting in this country. We cannot imitate the German cartel system, but we can do something suited to our climate and our type of mind that will take its place.

I am not touching on any political questions, I am not a free-trader or a protectionist. I think the day has gone by when one should bear these tags. The question is what to do to-day; how are we going to develop Canadian industries so as to meet the keenest competition in trade that the world will ever see in the next fifteen or twenty years? How are we going to raise the revenue of \$350,000,000 a year when our revenue before the war was only \$175,000,000? Are not these questions enough to transport one's mind to some other region than that in which questions of protection and free trade exist? We must have revenue, otherwise we will go down. We will be a country backward in everything that relates to progress, and we must meet—and we must therefore devise new conditions, devise wholly new conditions to meet—the situation here. When I say I am not a free-trader or protectionist, I don't mean to deride those things. The question of protection to-day is not a live one, because how are you

going to raise your revenue without some form of taxation in the customs house? You see, therefore, it is to me one of those questions that one can shove aside; it is not a live question in the sense of the term. The question is how to raise the revenue from \$175,000,000 to \$350,000,000. Are you going to tax everybody until he is ground down to the heel? The only way to do is to develop the commerce of this country so that it will bear with the greatest ease this enormous burden.

The Council has been trying to do its bit. It is criticized of course, criticized by people of various castes and temperament, but we have gone very far, and I think you will agree with me when you read the report, copies of which I hope will be distributed to the members of the Canadian Manufacturers Association as soon as it is out of the press. Those who have read it approve of it enthusiastically, so I feel that I can make that recommendation to you to read it. To those who are critical, of course, let me say this, we are trying to do something, we are not debating academic conditions, we want to get somewhere. We feel in doing that we are very much alike, and we feel that our critics, who are not very many, are like the negro who was behind the bars but who had an opportunity to look down in the courtyard of the prison, back and forward in which passed another negro mowing the lawn. The negro in jail said, "What is the time, Sambo?" There was no attention paid by the lawn mower to this, repeated every time he passed back and forward, but the lawn mower got tired, and he said, "What are you asking that question foah? You ain't gwine anywhere." Those who are tied down by old traditions and associations and conservatism are in the position of that negro. (Applause).

Vocational Statistics

Over a Thousand Courses Granted During May to Returned Soldiers Disabled in the War

Over a thousand courses of re-education for returned soldiers so disabled that they cannot resume their pre-war occupations were approved during the month of May. The table of statistics prepared by the Vocational Branch of the Department of Soldiers' Civil Re-establishment shows that on June 1st, 4,876 men had been granted courses while the figure for May the 1st was 3,861. The number of courses in progress on the latter date was 2,077, of whom 2,038 were discharged men. The number of men who have completed their courses and gone out into employment was increased from 351 to 481, a total of 130 during the month.

The number of men who have refused to accept courses of training granted them is 263. In addition 323 men have discontinued their courses after beginning. There are, therefore, at the present time 996 men who have not yet commenced training, chiefly because their health has not reached the point where they can be discharged from the army.

The number of men attending the occupational therapy classes, conducted in the

military hospitals by the Department of Soldiers' Civil Re-establishment, increased slightly during the past month, the enrollment in the classes now being 1,699. This does not include the ward occupations, such as basketry, embroidery, weaving, etc., which are conducted at the patients' bedsides. Another activity of the Department is represented in the evening classes of instruction for discharged men. There are at present 55 attending these classes.

Manitoba's Hotels

Effort Being Made to Bring them Up to a Higher Standard for Service of the Travelling Public

There are now nearly two hundred hotels under license in the Province of Manitoba, and according to a statement by Hotel Administrator W. J. May, the great majority of the proprietors are conducting their houses in a manner that is a credit to the different communities in which they are situated.

It is the purpose of the administration to have one licensed house in every town or village and so assist them that they are able to provide good meals and comfortable rooms with a satisfactory service to the travelling public.

In many cases Mr. May has interviewed the councils of the municipalities in which hotels are situated, and has been able to secure a grant to the hotelkeeper that enables him to make ends meet and carry on. That such grants are made is because municipalities recognize that it is necessary to have a hotel or stopping place at central points, and that the means that hitherto were used to secure profits for the business have been cut off by prohibition, it is a wise policy to help the proprietor to conduct a good house.

A movement is now on foot among the hotel men of the province to appear before the next session of the Manitoba Legislature and ask that they be given a monopoly of selling the temperance beer. They believe that if they are given this favor they will be able to make their hotels pay while conducting them in a manner as asked by the Government. Such a request will be strongly backed up by the hotel administrator, who is of the opinion that the hotel men of the province are endeavoring with the small means at their disposal to bring their hotels up to the required standard of accommodation.



Snapped at Montreal

S. H. Chapman, of the Ontario Wind Engine and Pump Co., Toronto

Air Hoists

The Canadian Ingersoll-Rand Co. have just issued a new catalogue of their direct lift vertical air hoists. The booklet is well illustrated, and gives complete details of the different types of valve used for various classes of work up to five tons capacity—the dust-proof single acting, the dust-proof air balanced, the dust-proof double acting. Complete tables are given, including a useful table of the free air consumption of the hoists.

The Attitude of the Farmer to Industry*

In Order that Development of Canada's Resources May Go On Uninterruptedly and
With as Little Friction as Possible There Has Got to be a Proper
Relationship Maintained Between the Different Industries
that Constitute the Business Interests of Canada

By RODERICK McKENZIE

Secretary of the National Council of Agriculture

MR. CHAIRMAN and gentlemen: I am exceedingly glad of the opportunity of meeting the members of the Canadian Manufacturers Association, the first opportunity I have had of doing so. As was explained by your chairman, I was on my way through Montreal to the eastern provinces and I was induced by Mr. Henderson and the chairman to remain over. Not that I was at all slow in taking advantage of the invitation, because I did appreciate the opportunity, but it disarranged my plans in other respects, though I do not regret that circumstance.

Wider Activities

One thing that impressed me this morning in listening to the reports that were presented, was the report of the Executive Committee. The activities of the organization, as there presented, are much wider and apply to many more activities than the general impression of the objects of the Manufacturers Association would lead one to think. There is a common conception that this Association is in existence purely for the bolstering up of the protective tariff.

I was also very much impressed with the other reports that were presented and the amount of valuable information not only to manufacturers but to business men and farmers that was there conveyed.

Let me say in a few words this: that we have here a country of vast possibilities, of enormous natural resources, and it is the business of us all to do our part in the development of those resources. We cannot all be manufacturers, neither can we all be farmers. There is a diversity of interest that is necessary, or a diversity of business that is necessary for the proper development of this country of ours. But let me also say this: that in order that that development may go on uninterruptedly with as little friction as possible there has got to be a proper relationship maintained between the different industries that constitute the business interests of Canada. If there is one industry which is suffering or thinks it is suffering from the privileges bestowed upon another industry it is going to cause friction, and I think will also interfere with the proper development of our natural resources.

Use our Fertile Acres

Now, one of the great resources we have is that of our fertile lands, and it seems to me, without any prejudice against any other of our industries, that the prime object of Canada at the present moment should be to make the millions of fertile acres we have in the Prairie provinces produce wealth. Anything that conduces to that end will help the development of the country.

Just one more point along this line. A study of the bulletins issued by the Dominion Government goes to show that for the last twenty or thirty years there has been a tendency

on the part of our population to centre around industries in urban communities. The Dominion Government has issued a bulletin giving the occupations of those of the population who are engaged in gainful occupations and the number that were engaged in the different industries. In 1881, one hundred and fifty-four out of every one thousand of the population of Canada were engaged in agriculture. I mean one hundred and fifty-four out of the population of Canada which was engaged in a gainful occupation. That number, according to the census, decreased to one hundred and thirty in 1911. On the other hand, the number engaged in trade and merchandise increased from 18 in 1881, to 39 in 1911. There was a proportionate increase in those engaged in manufacturing, transportation and the other occupations. The point is this, that that part of our population that was necessary for the development of our great industry of agriculture is being reduced in proportion to those engaged in the other industries. To put it in another way, the census bulletin of 1915 gives us this information, that 38 or nearly 39 out of every 100 engaged in gainful occupations were engaged in agriculture; that 10 and a fraction over were engaged in commercial enterprise, that is, trades and merchandise. That is to say, there was one man engaged in trades and merchandise to every four that were engaged in agriculture. In the three Prairie provinces there were over 1,700 retail dealers a few years ago where there were about 190,000 farmers who were farming 100 acres and over. Any gentleman that will give consideration to this fact can realize that the burden on agriculture in proportion to the urban population is growing and increasing and tends to make farming unprofitable.

Cannot do Without Manufacturing

Now one other thought, and that is in connection with manufacturing. (Canada cannot get along without manufacturers, we realize that, but we have yet to be shown that in order that we may have manufacturers in Canada they must have protection; and we farmers go further than that and say that any manufacture, any industry in Canada, that has got to have protection to live, we are better without.) I am talking candidly to you gentlemen; I am telling you the facts. I will give you one illustration: the organized farmers pay \$38.00 on a three-section gang plough and we deliver them to the farmers considerably cheaper than the Canadian manufacturers deliver them to the farmer. I think that is an unnecessary burden to the development of agriculture.

That is all I have to say. I am glad to have the opportunity of meeting you. We want to get closer to you, and I hope you want to get closer to us. You think you are right. We want to be shown that you are right, and I think if an arrangement could be made whereby the representatives of the great industry of manufacture and the great industry of agriculture would meet together, throw the cards on the table, and let us discuss it out—I was going to say fight it out, but that is not the way it would be beneficial. I used

* Address delivered by Mr. McKenzie before the Canadian Manufacturers Association at Montreal, June 12, 1918.

to think there was a good deal of virtue in fighting, but I have changed my mind. We can discuss it with one another and see if we can find out why there is a difference between us, and see if it is possible to get closer together. I thank you.

A REPLY TO MR. McKENZIE

In moving and seconding a vote of thanks to Mr. McKenzie, Mr. Henderson and Senator Nicholls made the following interesting comments on the relations between agriculture and the manufacturing industry:—

MR. HENDERSON (Windsor): "It was my privilege four years ago, as representing the Canadian Manufacturers Association, to go as a delegate to meet Mr. McKenzie and a number of his friends, and I told him after we had met that we were looking for the hide and they were looking for the hoofs and horns and we didn't find either, but when we went out there we found a good lot of clever men, and I think the meeting we had then will have good results in the future. I am one of those who think that a farmer, more particularly a dairy farmer, is one of the most skilled manufacturers in the world. He takes the rain and the sun and he brings his brain to bear on the culture of the grain and the manufacture of butter and cheese, and it requires some skill to do that. The ordinary manufacturer hasn't got that skill. For that reason, I say, there should be no division between the farming community and the manufacturing community of Canada.

"This is a great country. Manufacturing alone, farming alone, will never make the great nation which Providence intended that this should be. We have to work hand in hand, but I say, woe betide the man who strives to make a difference between the farmer and the manufacturer and I don't care who or what he is. I say there is no hell too hot for that man, and I mean it, and I am not speaking in an irreverent manner when I say it. But I do say this, instead of trying to stir up division between us, the talk should be the very opposite. You know in the good old Book there is a maxim, 'Bear ye one another's burdens.' It may be that our farming friends in the Northwest cannot see that it is necessary we should do so. I am not going to enter into that now, but at the same time, if it is going to build up Canada, I am quite sure they are prepared to bear their share of the burden in order that Canada may be built up. For that reason I say instead of having division we want to get together and meet as Mr. McKenzie has met us here.

Want Others to Come

"I didn't get up to make a speech. I got up to move a vote of thanks to Mr. McKenzie for his goodness in coming to address us this afternoon, and I only say I hope that at future conventions we will not have him alone but we will have others coming down here attending our sessions and seeing exactly what the Manufacturers Association stands for, and they will see that it is not, as some credulous reports have said, thinking of nothing but tariff selfishness for ourselves instead of the good of the whole Dominion."

SENATOR NICHOLLS: "Mr. chairman and gentlemen, I have much pleasure in seconding the vote of thanks moved by Mr. Henderson to Mr. McKenzie for his instructive address. I have listened with a very great deal of interest and I am heartily in accord with his suggestion that we should meet oftener and lay our cards on the table. Mr. McKenzie has said he cannot see why the manufacturer needs protection in order to compete with the outside world, and I don't blame him for forming that opinion if we as an Association have been negligent in seeing that he and those associated

with him have not been educated regarding our necessities and as to why a manufacturer needs protection.

"Now, on the other hand, sir, I fail to understand some matters in connection with agricultural interests, and perhaps Mr. McKenzie would be able on some future occasion—we will not enter into a debate now—to enlighten us. Mr. McKenzie has referred to the last census, and if my memory serves me correctly, according to the last census there were 714,000 people in the Dominion of Canada that were engaged in agricultural pursuits. Those 714,000 people produced no less than two billion dollars of farm products. That is a very large sum to divide among seven hundred and fourteen thousand people. I notice in one of the newspapers that the average cost of the production of a bushel of wheat was 80 cents, and yet I note that the price fixed by the Dominion Government for the purchase of wheat is \$2.20 a bushel, and allowing for fair interest and depreciation on the amount of capital invested I assume that the farmers to-day are making no less than from two hundred to three hundred per cent. profit, which is a great deal more than any manufacturer I have heard of has ever been charged with making.

Insurance from Taxation

"On the other hand, Mr. Chairman and gentlemen, you must remember that the farmers are immune from the war profits tax and practically immune from income tax. We are not objecting to that, we are only too proud to think so large a section of our community has been able to come to the fore and help to feed Great Britain and the Allies during this time of stress. We do not grudge it to them one iota, but there is an old proverb which says we must live and let live. Therefore, Mr. Chairman and gentlemen, I say nothing but good can be gained by our meeting more often in conference and laying our cards on the table.

"It was only yesterday I happened to come across a little item in the paper that pointed out the success and prosperity of the Province of Saskatchewan, and one of the things that pointed to this great success and prosperity was that on the first of March there were registered in the office of the Provincial Secretary of the Province of Saskatchewan no less than thirty-three thousand automobiles. I venture to say that is a greater proportion than is registered per head of population in either Ontario or Quebec. More power to their elbow. I don't begrudge the farmers of Saskatchewan having fifty thousand automobiles. I want to see the prairie blossom as the rose, but on the other hand you cannot have a united and contented country, you cannot have a prosperous country unless agriculture and industry unite. Mr. Chairman, I do not wish to occupy the time of the convention, and I therefore conclude with seconding the vote of thanks to Mr. McKenzie for his instructive address."

Air Compressors

From the Canadian Ingersoll-Rand Co., Limited, there comes a 32-page booklet, printed on fine coated papers, illustrating and describing the Ingersoll-Rogler air compressors. The booklet gives a sketch of the development of the "Ingersoll-Rogler" valve, with particular attention to the application of the valve to large air compressors, having direct synchronous motor drive. Other special features of the "Ingersoll-Rogler" compressors described are the rolling mill engine type frames, special intercooler design and clearance controller with automatic maximum load stop. The booklet contains fifteen illustrations, showing details of the compressors.

Place of the Chemist in Canadian Industry*

Progress of the Past Twenty-Five Years in Chemical Industry—Some of the Important Discoveries That Have Been Made—Ways in Which the Chemist May be Useful to the Manufacturer and the Great Need of Technical Education

By PROFESSOR W. L. GOODWIN

Chairman, Canadian Section, Society of Chemical Industry

MR. PRESIDENT and gentlemen, I must in the first place thank you very much for the invitation which has brought me here to-day to address this important Association which represents the great manufacturing industries of Canada, and I must confess that it is with some timidity that I, a poor university professor, undertake to talk to such a body of men because I realize that my pursuits have hardly qualified me to put things in a telling way to such a body of business men, but if you will accept the will for the deed I shall do the best I can.

The newspapers often give an account of the Canadian manufacturers which, in fact, to put it quite frankly, led me when I first came among you here to keep my eyes open for signs of the hoof and horn, but so far, at any rate, I have failed to discover anything which was much in evidence in that direction, although I must recall something which was referred to by the reader of the last report, and remember that the sounds from Room 150 which floated across to my room to which I retired rather early in the evening, suggested that perhaps horns were in evidence.

Now, Mr. President and gentlemen, to come to the serious business for which I am here as representing the Society of Chemical Industry, I wish to call to your attention in the first place the purposes for which that Society was founded. Reading from the Journal I see that these purposes were three, first, to promote and advance applied chemistry and chemical engineering; second, to afford opportunities for the interchange of ideas with respect to improvements in chemical industries and all matters bearing upon the applications of chemical science; third, for the publication of information connected with this subject.

The Society and the Association

If in this programme we substitute manufactures in general for chemical industries I think this is the programme also of the C.M.A. So for the present, at any rate, we may look upon the Society of Chemical Industry as a branch in fact, if not in form of the C.M.A. But there is another side to it which I proceed to elaborate a little. Of course the chemist is in evidence in all chemical works; it is there that he finds the greatest outlet for his effort, but he is also in evidence in almost every branch of manufactures. In these days where manufactures are carried on with the utmost attention to the application of scientific principles, chemical control is the order of the day; and more and more it is becoming the fashion. I was almost going to say it is more than that, an underlying principle, for manufacturers to seek the aid of the chemist in carrying on their business. To such an extent has this gone that universities where chemists are prepared have been utterly unable of late years to meet the demand for their graduates. This is a consummation, gentlemen, about which I dreamed fifteen or twenty years ago, and you can understand the delight with which I have been able (and my experience is that of the heads of departments of

departments of chemistry all over Canada and the United States also) during the last year or two to reply to letter after letter from some of you manufacturers: "No graduates in sight, no graduates in chemistry who are not already in positions." And I have also had letters saying, if you can't send us a graduate perhaps you could send us a third year student; and in one letter women chemists would be accepted. Well, that is going some. It shows that we are getting in Canada in our manufacturing industries very far along the line which we must pursue with the utmost energy of combining with our acknowledged business ability in this country the close, careful and complete application of scientific principles. Now I will warrant that there are many members of the C.M.A. who are scared by the word "science," and it has been so misused and mystified that I don't wonder at it. But if we remember that science is simply up-to-date knowledge of things and the habit of looking at things and carrying on business in that spirit—up-to-date, the best up-to-date knowledge, that is all it is—we need not be frightened by words.

Co-ordination of Effort Needed

If I go on in this direction a little while longer, I am afraid, Mr. President, that the Association will begin to think I am proving that after all the Canadian Manufacturers Association is a branch of the Society of Chemical Industry instead of the other way round. That just emphasizes the principle which I wish to impress upon you very strongly, and which has already come before the meetings of this Association so frequently, that is the principle of co-operation and co-ordination of effort, using the words which were used twice in the course of the report on transportation.

Perhaps you will pardon me if in taking a look at the Canadian chemical industries I take a look backward a bit. I am no longer in the palmy days of youth. I have been following the progress of Canada now pretty closely and actively for some thirty-five years. I can recall, by the way, a meeting of the Canadian Manufacturers Association held in Halifax. Oh, it was a good many years ago, Mr. President; you must have been there (laughter) and a number of others whom I see here, whose hair, like my own, is getting a little scarce on top and not the same color that it was when we were younger. I recall that meeting in Halifax and even at that time the Association was very strong but the chemical side of it was almost non-existent. Twenty-five years ago—why, we can hardly say that there was any chemical industry in Canada twenty-five years ago.

History of Chemical Industry

Twenty-five years ago the chemical industry of Canada was almost non-existent. I recall things like this, that we were destructively distilling wood and had got as far as to manufacture crude acetate, but even then we were struggling with the lack of convenient raw material for that industry; we had used so lavishly as income what we ought to have used as capital, namely, our wood resources, that we had to

* Address delivered before the annual meeting, Canadian Manufacturers Association, at Montreal.

go farther and farther afield for our raw material, and some of those industries even at that time had a pretty hard struggle.

I recall also things like this, that somewhere about that time, or rather later, we began to mine pyrite, and we sent this pyrite over to the United States where it was manufactured into sulphuric acid, and we brought it back at a pretty good price to us and used it largely for the manufacture of superphosphate. That was a chemical industry I knew of at the time. We changed all that; we manufacture our own sulphuric acid now. There were a few odds and ends like that, but outside of that the industry was almost non-existent.

What a change in twenty-five years in our chemical industries! In the first place we had enormous difficulties to overcome. Our small population and the almost primitive conditions of our life in Canada in those earlier days compared with our complex life of to-day gave us a very small home market for the products of chemical industries. It seemed hopeless to seek to undertake the competition in foreign markets, but the greatest difficulty of all in the founding and carrying on of chemical industries was the lack of trained men, the lack of men with scientific training for the top and with technical training, using that as a lower term, for the rank and file. I think that was the greatest difficulty. Well, all these things have changed, more or less, and before this great war came upon us we had made very considerable progress in founding chemical industries, and the war has done this for us in chemical industries as well as in other things, it has made us feel our power, it has banished timidity, it has intensified the spirit of enterprise, and the chemical industries perhaps as much as, if not more than, other industries have felt that infusion of intensified energy, and as a consequence works after works have been established. Since the beginning of the war it is estimated, as I see in the February number of the Canadian Chemical Journal—and, by the way, the fact that there is this new trade journal now in Canada, the Canadian Chemical Journal, is significant of the progress of this industry—I see that it is estimated that something like \$100,000,000 has been invested in this industry since the beginning of the war. That may be a low estimate. I am not in the way of getting at such estimates, as this is the only one I have access to.

Industries Since the War

I think it would be perhaps out of place and somewhat tiresome to those of you who are not chemists if I undertook to review in detail the chemical industries which have been established, but for the sake of emphasizing some of the features permit me to refer to two or three of them. I might come to Montreal here and pick out a number of interesting instances. I might go to Toronto and find a number of others. I might go to Shawinigan Falls or Niagara Falls and detail a very considerable number of the chemical industries that depend upon the use of electricity. In that way I could go over a large ground, and we should find a very great variety of chemical industries. The one which I shall speak of first is the conversion—the manufacture of acetic acid and various other products at Shawinigan Falls from materials that are simply inorganic, rocks and so forth. Starting with calcium carbide, which, as you know, is made from limestone and forms of coal, we get acetylene, and from acetylene we proceed through various stages to acetic acid. We have this familiar substance, the basis of vinegar, manufactured from rocks. We may say this is a triumph of the chemical investigator. The possibility of it was known years and years ago. We have succeeded in Canada in erecting that possibility into a most extensive and valuable chemical manufacture.

Then of a totally different sort, but still very Canadian, I wish to refer to some products of two metal ores of which Canada has a fair supply in one case, chromite, and of which she has almost a world command in the other case, namely, the ores of Cobalt. Now our chromite deposits have been known for a long time. The Province of Quebec has been mining chromite for a good many years, mostly to export for various uses, the manufacture of bichromate and chrome steel, and so forth, but it has remained for the chemists and metallurgists of Canada during the last two or three years to devise improved methods for handling this chromite ore so that we are now prepared to manufacture bichromate and chrome green, and so forth, from our own raw material; and if the manufacture has not already begun, it will soon be started on a process which I happen to know does something like this—and this emphasizes the value of research to which I shall have to refer again—it raises the extraction from, we will say, eighty per cent. to ninety per cent. That is the kind of thing which the Manufacturers Association can appreciate, because the increase of a valuable product from eighty per cent. to ninety per cent. means what you call profits.

Cobalt and its Compounds

The other is the manufacture of cobalt and its compounds. In that most valuable district which we call the Cobalt district, we have, as I say, almost a command of this valuable material, and for quite a number of years after this district was exploited cobalt residues, residues of this metal, the oxide of this metal, were accumulated by thousands and hundreds of thousands of tons and not worked up. Why? Because it was used for pretty nearly just one purpose, namely, making that beautiful blue which we see often, the beautiful deep blue in dishes and so forth, and for that purpose so scarce had been the material up to this point that the material commanded a price of \$1.50 to \$3.00 a pound. The manufacturers who were extracting the silver and arsenic and so forth simply stored their oxide of cobalt, certain that if they put it upon the market it would so flood the market as to run the price down to a point at which the profit would be very small or disappear altogether. What were they waiting for then? Waiting for what some of them knew was coming—that is, for the completion of investigations which would in the first place so improve the process of extraction and purification as to decrease the cost of production—the work of the chemist—and in the second place, for the finding of new uses for cobalt and its compounds which should absorb all the product that could be put upon the market. Both of these objects have been attained by the work of the research chemist, and I am proud to know that the first one—the improvement in the processes—has been attained by the work of Canadian chemists working in Canada.

Two Modest Men

We owe a very large part of this to one of my colleagues who is such a modest man that you never hear his voice on the platform—he is not like me—so retiring in every way that you would hardly know that he exists, but the chemists and metallurgists of Canada and the United States know his work very well. I refer to Professor S. F. Kirkpatrick. Another name I should mention in connection with this growingly important industry, and that is Mr. Haines, because it is due to him very largely that we have the principal new uses of cobalt which will absorb all the cobalt that we can produce, and at a good price, too. I have no doubt that you are familiar with that beautiful alloy, stellite. Many manufacturers here will have introduced it as a tool steel, although it is a funny thing there isn't any steel in it or about it at all. It must be known to most of you. It is an alloy of

chromium and cobalt, and it is satisfactory to know that this substance will be manufactured in Canada from strictly Canadian materials, the cobalt from our Cobalt district and the chromium from our Quebec chromite; and the improved processes of manufacturing both of these separate metals have again been worked out in a Canadian laboratory.

It was proposed when the beautiful silver, non-tarnishing properties of stellite became known, to use it for cutlery. What a saving in dishwashing everybody thought, but it is very hard to work, great difficulties in the way of its manufacture. Now we hear Mr. Haines has tackled that problem, too, and there will be put upon the market very soon an alloy of iron, chromium and cobalt, and we have all the materials in Canada for manufacturing that, too, haven't we, which will make the most beautiful and perfect cutlery and which will be easily worked. This substance will be put upon the market under the name of "Festal metal," I suppose because it will be used so much on festal occasions.

The Minor Chemicals

Now I wish to refer for a minute or two to another phase of chemical industries which is at least of present importance, and that is the manufacturing of the minor chemicals which are required only in small quantities by utilizing our university chemical laboratories and the staffs that are to be found there. This has already been carried out in some of the universities of the United States, principally in the University of Illinois, and there are a number of substances which are required in industries too, although only in small amount, and for the supply of which we used to depend upon Germany, where large industries had been built up depending upon the manufacture in one works of a very great number of more or less closely connected substances. A number of these are now being manufactured in these laboratories, and a beginning has been made, I believe, in Canada in that respect. I look upon this as only a temporary expedient, as a preparation for the time when the manufacturers of chemicals in Canada take this up and found some such works as those which have been supplying the demand through Germany. But we find ourselves very badly handicapped in our efforts at this manufacture. They are mostly organic chemicals and they require the use of alcohol both as a solvent and as a material to convert into other compounds. Now up to quite lately universities have been able to import alcohol for strictly laboratory purposes, duty free, but with the recent legislation we have had that possibility is cut off, and there is no corresponding chance of getting cheap alcohol within the bounds of Canada. We are betwixt the devil and the deep sea. We can't get cheap alcohol and we have got to face paying \$6 or \$8 a gallon for the purified alcohol which we require, unless something is done. Our difficulty is also shared in by the manufacturers of many chemicals, and it has led the Society of Chemical Industry to discuss the subject and to pass a resolution which I shall read to this Association in the hope that this great body will take up the subject and try to get an arrangement made by means of which duty-free alcohol, excise duty free, will be available for manufacturing purposes. The resolution was passed on the 22nd May at the annual meeting of our Society and reads as follows:

"Whereas the fact that alcohol for industrial purposes free of duty has contributed much to the prosperity of several countries;

"And whereas Canada has a number of distilleries now lying idle;

"And whereas new processes are now available for making alcohol from non-edible materials;

"And whereas the Dominion has an unusual opportunity of extending its industries in many directions;

"And whereas a new source of motor fuel is desirable;

"And whereas alcohol is not now an important source of revenue:

"Be it resolved that the Government be petitioned to permit the use of duty-free alcohol (that refers to excise duty particularly) subject to restrictions which would protect revenue and public safety."

The Supply of Alcohol

The subject, I know, is a very difficult one. To protect those unfortunates against themselves to whom the common presence of potable alcohol would be a danger is a thing we have to consider, and so we have the device of denaturing the alcohol, rendering it non-potable. Now, often in mixing these disgusting substances which are usually used with the alcohol we put in something which renders alcohol unsuitable for the purposes of certain manufactures. Many chemical manufacturers in England have in the past suffered great disability on account of having to use such denatured alcohol, and the whole subject is bristling with difficulties of that sort, but it is only a question of time when these difficulties will be wiped away, and in the meantime we must do the best we can, and we certainly should take the one step for us of asking the Government to give us the use of excise duty-free alcohol in some way or another as may be devised. I therefore lay this subject before you for your consideration.

Now just permit me a minute or two to discuss the status of the chemist in Canada. I think I need hardly urge this upon a body of men who are fairly falling over themselves and each other in hunting up chemists for their employment, but still perhaps we need to advise upon the matter a little. The status of the chemist so far as Government employment goes is not very satisfactory. In recent advertisements for the civil service we have such anomalies as this—I think this has been pointed out before—that a man with a lawyer's training is offered, in the same advertisement, about twice the salary of a man with a much longer and higher grade of training as a chemist. That should not be so. Surely the services of a chemist are worth for the same amount of training, at any rate, just as much as those of a man with a lawyer's training. But this thing is not confined to Canada. I noticed recently in an advertisement that was published in 1915 by the Royal Arsenal at Woolwich advertising for a chemist who had to be trained in organic and inorganic chemistry and to have a laboratory experience, and so forth, very high qualifications, offering the magnificent salary of £2 6s. a week; \$11.50 a week for a man with those qualifications. I believe things have improved a little since that time, although I had a letter from a graduate of ours who went over in the infantry a couple of years ago and who has since been transferred to some chemical work in England, and he says the great difficulty is that the owners and managers of chemical works do not really understand the meaning that "chemist" has to the work.

How the Chemist May be Useful

Now I would like to direct your attention to ways in which the chemist may be useful to manufacturers. These ways are familiar to you more or less, but I should like to emphasize them a little. In the first place the control of your materials of manufacture, the analysis of the water, the analysis of the fuel—I have no doubt many of you are using chemists for that purpose already—but above all the utilizing of the chemist for research, for the investigation of problems which arise, dealing with materials and the transformation of materials; and not only for the investigation of problems which arise, but reaching out into new fields; that is the greatest work which the research chemist can do for you. For ex-

ample, the improvements of methods of manufacture; also the utilization of waste materials. I suppose there are very few manufactures in which there are not materials which are thrown to the waste. I was particularly interested in attending the opening of the great Mellon Institute in Pittsburg in seeing room after room each with its chemist in it where waste materials were being investigated, the most unpromising things. I saw one man working at leather clippings. It seemed to me that was about the most hopeless thing you could imagine unless you distilled it and saved the ammonia, but to work up leather clippings and find a way of completely utilizing them—there he was hammering at the subject. I have no doubt he has solved it by this time.

Sulphite Liquor Waste

Just think as an example of the opportunities you have; just think of the bonanza that is awaiting that man who first gets on to the complete utilization of the sulphite liquor waste. Why, already it is a commercial possibility to manufacture alcohol from the comparatively insignificant percentage of fermentable sugars in that liquor, and we see recently a proposal to use the liquor as a binding material for briquetting lignite. That is a pretty coarse way of using it mechanically, but I warrant you it will stick bricks alright. In fact, it was proposed one time it should be a substitute for glue. I think it would not make a bad substitute when evaporated down to a sticky constituency. But just think of the bonanza, fifty per cent. of the log goes in soluble form into that liquor, and there is fifty per cent. of complex organic material which doubtless has great value, and we don't even yet quite know in what form it exists in sulphite liquor, and that is the first step to find out exactly. That is where the researcher will get his triumph, to find out exactly the constituent of the substance which we call sulpho lignates, and then we shall be able to find a use for it without any doubt. I noticed recently, as another instance in the same connection of what may be done, that it is possible in the sulphite pulp industry in the United States to extract annually three hundred thousand gallons of material which can be manufactured into toluol, the basis of our great explosive T.N.T., the demand for which is so very difficult to supply, and we have been allowing all of that to go off with the steam in our sulphite digestors.

A Personal Experience

Now just a minute for the further discussion of the use which can be made of the chemist. I recall, Mr. President and gentlemen, if you will allow me to be a little personal, an incident in my own experience which will perhaps accentuate the way in which we can utilize the training of men in science. I remember once, a long time ago, having been called in to one of these wood distilling works where they had great difficulty with a new branch of industry which they had introduced, namely, the distillation of the wood tar, so as to recover some valuable products and make wood pitch, which then promised to have some value, but they found a curious difficulty; after the distilling of the volatile constituents they had to run off the melted pitch, and it took an unconscionable time to fill those barrels because the stuff frothed and foamed and ran over, and they had to wait till it settled down, and it threatened to upset all their calculations, that simple little thing. I suggested to them they should put the tube down to the bottom of the barrel, no air, no froth, and they did and solved the difficulty. That was extremely elementary physics, wasn't it, but it will perhaps serve to point the moral and adorn the tale.

To show what an immense advantage our enemies have had over us in this respect of utilizing the higher products

of scientific training it is only necessary to quote one figure. In 1915 in Germany there was one university trained chemist to every forty men employed where chemists were employed. In Great Britain at that time there was one university trained chemist to every five hundred men. Is it any wonder that Great Britain lost industry after industry? Is it any wonder that the home where the great coal tar products industry saw its birth, England, lost the greater part of that immensely profitable industry? That points the way to us. If we are to take our place, come into our own in the great period of reconstruction which is upon us now—we do not have to wait until after the war—we must see to it not only that we combine business ability with scientific training, but that we take immediate steps to so improve our whole system of education that the men will be available to carry out these ideas, that the ablest young men in the country and the brightest children coming on shall have every incentive to take up such education and to look forward to and enter upon these scientific professions. To this end, gentlemen, we must act constantly and vigorously and unmistakably in the direction of technical education and industrial training.

Report on Technical Education

There has been pigeon-holed in Ottawa for several years a report on that subject which is a most masterly document. I have studied it pretty carefully and there are made in that report of the Commission on Industrial Training and Technical Education recommendations, all of which may not be practical, but many of them can be acted upon at once if we have the will to do it, and we have not taken the first step in that direction. We have lost years and years of valuable time and as a consequence we are unprepared for that programme of reconstruction because we have not the young men trained for the purpose. It is not only in the menace of trained armies that our enemies have had the advantage of us in this war, but in the host of highly trained intelligent brains working on these problems of research for the production of materials and munitions of war, so that when one resource was cut off another was found, so that when the nitrate from Chili was no longer available they began to manufacture nitric acid from the very elements of the atmosphere, and things like that were done constantly, things which they were prepared to do. They had been studying the situation for a whole generation, and their very perfect national system of technical education and industrial training is, and has been, our greatest handicap in this war, and will be our greatest handicap in the trade war which you seem to think will follow the advent of peace. Depend upon it, gentlemen, the Germans will beat us to it, particularly in the programme for getting export trade, which was so ably laid before us last evening, if we do not at once get busy on this subject of technical education and industrial training. In spite of the adaptiveness, of the native ability, of the power of initiative, of young Canada we must have the finishing touches put on by careful training; naked intelligence is not enough for the purpose.

The Supply of Raw Materials

This leads me just to a word on the subject of raw materials. Just a word because it has been before us a great deal. The most important raw material in Canada is the young Canadian, and the pity is that just at the present so much of it is raw. We must proceed to put the finishing touches of manufacture upon it and so prepare it for what is undoubtedly coming upon us.

In conclusion, Mr. President and gentlemen, I have been very much impressed with what I have absorbed of the tone of this meeting. It has impressed me in two ways; in the first place in the evident high standard of thinking which pre-

vails in connection with manufactures, and in the second place in the growing spirit of willingness to co-operate, to organize, to act together for the good of all, which has been emphasized more than once by speakers on this platform during this meeting. It is true, as Sir John Willison pointed out, that there was quite evident a little difference of opinion between the farmers and manufacturers on one occasion here, sir, but these differences can be composed and the way to do it is to get together. There are two ways of treating such a consideration, one is to stand off and fire letters and newspaper articles at each other and get into a controversy which is at first amusing to the public and interesting and at length becomes tiresome; no progress is made. The second way is to get around a table and talk the whole thing out. When men look into each other's faces and talk to each other they will always find, as we all have had experience, that the devil is not quite so black as he is painted. This spirit of co-operation is abroad and it implies that the industries in general of Canada must be organized in a very complete and perfect way. It is not for me, the more or less cloistered college professor, to undertake to outline to you the way in which this shall be done, but sometimes we professors get hold of ideas and while we are not good perhaps at working them out in detail, one thing we can do and that is we can give vent to these ideas. This spirit of co-operation, let me remind you,

is to be found not only here but is growing stronger and stronger in that body of two or three hundred thousand of our sons and brothers who are fighting our battles over in France. Many of them are being transformed from selfish individualists to generous co-operationists. I venture to close what I have to say by reading to you the programme which was outlined at a meeting of the Society for Chemical Industry which was held on March 16th, 1918, attended by representatives from practically all the allied countries' chemists, and here is what he said:

"The following are the fundamental conditions, the realization of which is essential for future prosperity:

1. Closer collaboration between science and industry.
2. Respect for and organization of individual liberty and property.
3. Development of technical education, of plant, of means of transport and exchange.
4. (And this is one of the most important because it combines the principle of the individual initiative with that of co-operation) Voluntary association for promoting production, union of capitalists and federation of workers.
5. Ever increasing concentration of productive forces.
6. Persistent action by public authorities to develop private initiative and to direct it to public ends, the greatest good of all."

We must never lose sight of the combination of those two principles, the individual initiative and the co-operation.

Apply German Lessons to Our Export Trade*

How Germany, Before the War, Set About Securing Trade Throughout the World—The System that Was Adopted by the Syndicated Associations Explained—Necessity of Co-operation and Fair Dealing in Matters of Price to Ensure Permanence

By BEAUMONT ALEXANDER

Secretary, Franco-American Company, New York

MR. CHAIRMAN and gentlemen: I am here to-night on the invitation of Mr. Smith and at the suggestion of Mr. Stewart. I think most of you gentlemen here know Mr. Stewart. He has been very anxious to bring about closer relationships between Canada and the allied countries. He was recently in France and Great Britain and was able to interest quite a number of men of international reputation in an organization which would take up the development of foreign trade throughout the various markets of the world. There are quite a number of men well known to you people in Canada, such as Col. Cantley, Major-General Sir John Carson, Lord Furness, of London, etc. They have gotten together with the object of forming a big international association to go out and properly develop the various foreign markets in the world on the same principle Germany did before the war. To that end you may have noticed some few weeks back Mr. Dupont purchased the Grand Central Palace in New York, a building with half a million square feet of space, which is to be turned into one of the largest export propositions in the world, and not only will the merchandise of Great Britain, France, the United States and Canada be shown there, but all countries connected with the Allies.

I feel in talking to an audience such as this that I have before me men who are responsible for the development of Canadian trade. All of you have stood behind your Government and the Allies in supplying their requirements in this great war. Eighteen months ago I was in London and I know

that the Canadians have come out with glorious colors there, and we are very proud of them. One thing that is necessary for you gentlemen is to think of the after-trade war which will follow peace. That is something we have got to think about, because I have a message for you which will interest you so far as what Germany did before the war. My connection with the syndicated associations in Germany extended over a period of seven years, four years in the investigation of markets and three years in the collection of the data which has been compiled by over 120 investigators working in 79 markets throughout the world. These men were sent to all parts of the world not to sell merchandise but to investigate the market requirements. They would tabulate the information; they would go into Australia and buy merchandise, find out what it cost to import in that country, find out what the importer sold to the jobber, what the jobber sold to the retailer, and the retailer to the general public; what the volume of that business was in that particular market over a year's period. All that information would be tabulated and sent to Hamburg and distributed amongst the manufacturers interested in that particular line. So that the German did not send out to that country merchandise he thought would suit the market, but what he had samples of, and what was selling there in volume. We have got to come down to that ourselves. We have got to investigate the market and find out its requirements and what its buyers want us to do.

Following the investigation of the various markets the German would then send out his selling men. Each of the

* Address delivered before the annual convention of the Canadian Manufacturers Association at Montreal.

departments would be syndicated. I mean by that you might take the cotton goods industry and they would split that up into several departments, but each line going into that department could be sold by a specialized salesman. He would go out into the markets of the world and be able to sell merchandise cheaper than the individual could sell it, because he was representing a particular part of the industry. Take that type of selling which meant that they utilized what was the best that money could buy and they were selling four lines of merchandise and it was costing the individual manufacturer 10 per cent to sell his merchandise. The German looked on the volume of business he was doing and not on the individual amount, so that if the individual manufacturer's highest selling cost was 10 per cent, the syndicated cost was $2\frac{1}{2}$ per cent. Then again the German, when he met competition, was able to go into the markets and sell under cost. Lots of people think the Government stood behind them and financed them in that selling at a loss principle. There was a little bit of that done but it was not general.

Let me instance cutlery. An investigation was made in South America, the Straits Settlement, the Dutch Indies, and South Africa, and after a period of eighteen months we found we could put the price of medium priced cutlery up one-half per cent., which gave them a two per cent. volume over the four countries. They immediately went into Australia and cut it down 2 per cent on the cost. They were able to do that because they had a world trade; they knew the conditions of the market; they had men trained to get this information; and it would be particularly easy for you, gentle-

men, if you got together, to go out and do the same class of trade as Germany did in that way. They were quite certain in advancing their price one half per cent. in that particular market it was not going to hurt them. They had the control of the market, and in that way in any line they took it in their head to get hold of they used to go in and get it in that way.

Now, the Germans looked upon foreign trade as their first consideration, the domestic or home market was second. Their reason for being anxious to cultivate foreign trade was because they didn't run up against any slumps or any conditions like they would in their home market. If one foreign market was bad the other was good. If you like to look up the figures from 1909 to 1913 of the German trade you will find the German export trade went on increasing year in and out.

Another point came which was very important to the German manufacturer, and that was in his home trade the buyer was dependent on the manufacturer, not the manufacturer dependent on the buyer, and in that way they did not have any returned merchandise. When the manufacturer would sell a bill of goods it was sold, and went out, and didn't come back again. The Germans did not build this trade up in from one to seven years even. It took them seven years to make an investigation as to who were the buyers throughout the world. They went in after they had finished their investigation so far as the merchandise suiting the market, to find out who the buyers were, to tabulate them; if departmental stores, if jobbers, or machinery people, or whatever it was, they made a tabulation of them and looked up their financial standing. All that information was sent back also to Hamburg, and the banks then took up the various houses where the orders came from and knew the financial standing, and they were able to afford credit.

German Data on Hand

That is a very important question in foreign trade. In this organization, which I have enumerated shortly in my talk, we have gone into that question. We have this German data, we have their list of over fifteen thousand buyers whose financial standing is guaranteed by various banking institutions throughout the world, and you could come down to us and you could say, We want to do business with high-class departmental stores, and we could give you every one of them; if it was the medium class, or cheap class, we could give you that information; if it is machinery, foodstuffs, or silks, or textiles of any description, we have a list in our office which will give you the desired information. Now, that is very essential in developing a foreign trade. You gentlemen will realize how expensive it would be for you as individuals to go out and make an investigation throughout the various markets of the world in order to be sure you are going to do your foreign trade right, and I don't think it is possible for any individual manufacturer to go out and successfully build up a foreign trade. The only way you are going to be able to do it is by getting together. You have got to form yourselves into associations the same as Germany did. You have got to have a selling organization to go out into the various fields and sell your merchandise, but you have got to be part and parcel of that organization, you have got to step one step closer to the actual buyer of your merchandise.

One thing which has struck me very forcibly in the United States is the high selling cost of merchandise. In 1912 the Association with which I was connected sold its merchandise throughout the various markets of the world at under 4 per cent. and made a profit. Now, gentlemen, it would be very hard for you to formulate any selling scheme



Snapped at Montreal

A. McMahon, of Union Drawn Steel Co., Limited, Hamilton

which would take you into the various foreign markets and allow you to sell your merchandise and run 150 selling men and investigators on the basis of four per cent. That is where we have got to come to. We have to reduce our selling profit, and the labor condition of the various allied countries is very high, and it is difficult to bring down the labor conditions, but you can bring down your selling cost by syndicating your departments and forming yourselves into organizations. We have formed in New York the first Association under the Webb Government, and every manufacturer that has come into the organization, that is to say, in each industry they have their executive committee, and the executive committees report to the corporation all the information relating to their particular industry. In return, the corporation send back to the various markets of the world all the information they are collecting in the various markets as to conditions, samples and prices, just the same as the German did. This information is unavailable to you and that was one of the reasons the Grand Central Palace has been taken over.

The Leipsic Fair

Most of you will be familiar with the Leipsic Fair; it was run by the same organization I was with, and we have just planned running a world's fair at the Grand Central Palace in about eighteen months' or two years' time. We have laid down a definite plan to bring 1,000 buyers from foreign markets of the world to New York to buy merchandise at no cost to themselves. That is giving you an exhibition proposition which will bring the buyer to your door, and that is what is necessary. In Leipsic, if any of you gentlemen were there, you would know it was very difficult to get accommodation, if you hadn't done so some two or three months ahead. We feel, in order to be able to fight Germany after the war, we have got to have a co-operation between the manufacturers, not only of Canada, but of the Allied countries, because Great Britain before the war was up to a pretty big volume of trade, and France doing a very nice export trade, and the one thing we are out to do is to take care of the two and a half billion dollars which Germany did in 1913. That amount of business to-day is going idle, and it is up to you to go out and get a share of that, and that small share which you could take care of would assist you in this country to go out and develop a bigger trade as the years go on. Because there is no doubt the hatred that exists throughout the Allied countries to the Germans is not going to get them back for many years to come.

The German mind works along a certain set principle. Before the war he used to say, Nobody will fight us, and they didn't fight them commercially. The propaganda they conducted throughout the world led everybody to believe that they had the Government behind them and could go in and dump their stuff and lose all kinds of money. That was not so. If we could have got an organization together of allied manufacturers at that time we could have fought them; but they used to make up their minds to do a thing and go in and do it. You will find that principle will be running along in the way they have fought this war. They walked up to Belgium, and they thought they could walk through Belgium, and they found they couldn't. That was one mistake they made. They thought the suffragette question in England would be detrimental to the British Government. That was number two mistake they made. If you follow the war through you will find they have made dozens of mistakes where they had made a definite plan to carry a thing out; and I know from personal experience that the German was dependent on the allied brain before the war to develop their foreign trade. There were more Englishmen and Frenchmen in that organization than Germans. The German was at home and used to formulate certain ideas, but he had to have them

carried out by Englishmen, Frenchmen, or Americans, or somebody outside of themselves. They have men in some instances who are brilliant, but we have sufficient brains in Canada and in the United States, and in Great Britain and in France, to go out and do more than Germany ever did, if we get together.

I feel, after hearing your President talk this afternoon, if you will really take up this foreign trade question seriously, if you will go out and make your investigation before you try to do a foreign trade, if you will get next door to the buyer yourselves, or in association, that you will be able to do a foreign trade. There is the opportunity. The markets of the world to-day are hungry for merchandise. It is not a matter to-day of going out to seek foreign trade; you could go out and get it, but getting it to-day is not permanently establishing it. I have seen a number of instances in New York and in various parts of America where export commission houses have built up a very fine war trade, and at the expense of the manufacturers. I know of one instance where a certain commission house in New York had an open order to buy a certain line of merchandise in the New York market. It was bought and shipped. It was proved afterwards the export house made thirty per cent. profit out of the sale, where they should have made about three per cent. by commission. Such a thing as that will not develop a foreign trade for the manufacturer. I had reason to make an investigation of that, and I know that particular commission house is ear-marked for life, not only with that particular buying house in London, but by the entire Buyers' Association. The proper way to develop foreign trade to-day is to give the buyer the best value you can honestly do for the money, not to get rich out of conditions to-day, but to go out with the idea of permanently establishing yourselves, because the various countries are only too glad and willing to buy your merchandise if you will send it out right. See that your volume is up to your sample, and if you can come down five or ten per cent., come down to-day, because you are doing something which is establishing for yourself a permanent foreign trade.

A Most Important Question

It is, to my mind, the most important question you gentlemen can start considering, because you are going through an abnormal period. You have enlarged your plant; they have enlarged their plants in Great Britain and in the States. How are they going to take care of that increase or of the over-production after the war is over? It is all very well to say that the thing will work itself out, but it won't. We know when peace does come we will have a period of prosperity. That period will only be so long as we can supply the hungry markets of the world. After that is completed we are going to get a slump on our home market, but we can avoid that if we get right down to-day and begin to develop the foreign trade, and to lay our plans upon which to build a solid foundation for foreign trade; and if you can develop \$5,000 worth of business from the Dutch Indies, and \$50,000 from Australia, and \$25,000 from New Zealand, and so on, you are going to be able to take care of the volume of business you will have thrown on your hands.

In closing, I would like just to say that anybody who is interested in the development of any market, or if there is any information or figures or data that I can give you on the German trade subject, I would only be too pleased to do so, because the seven years I put in in organizing and developing German trade I feel is an asset to you to-day, and it is for you and for any allied manufacturer throughout the world, because I feel in giving that information I am helping you to develop a foreign trade and to do your share in after-trade war which will follow peace.

The British War Mission at Washington*

Some of the Functions of the Mission Are Explained—The Part Played by Canada in Its Work—How Canada and Canadians Are Regarded in the United States, and What Uncle Sam is Doing to Win the War

By T. P. HOWARD

First Vice-President C.M.A., Deputy Director-General of War Supplies for Great Britain

GENTLEMEN,—You were good enough last year to elect me second Vice-President of the Association, and almost immediately I was asked to join one of our ex-presidents, Mr. Charles Gordon, in Washington, to assist him in the British War Mission. Not being legible for active service, I deemed it not only an honor and pleasure, but a duty that I think every man in this room owes to the country that if he gets a call any time he has got to throw up his work and go to it. I want to tell you that I have met with a great many refusals from men I have approached to join me in Washington, and I have also met a great many men who have accepted.

In addressing you on this subject this evening, I want first of all to draw your attention to one fact I have noticed on my various visits back to my home town. I have heard a great many remarks to the effect that the United States are slow. Gentlemen, get that out of your head. Realize what it means in the first place to organize a nation of over one hundred million people, put them on a war basis, to organize the shipbuilding, the aeroplane end, the food end, and then to organize an army and get that army overseas. They are a little bit over a year in the war to-day and I see Secretary Baker acknowledges 700,000 men safely landed on the other side. I think, gentlemen, Secretary Baker could go a little stronger.

A Very Large Staff

In talking of war activities in Washington, as far as the British War Mission is concerned, I want to explain in the first place that my part of it is purely the commercial end; I don't propose to touch in any way on the military end or the other part of the Mission. It may be perhaps interesting to you gentlemen to know that His Excellency the Earl of Reading has a staff, all told, in the British War Mission, running between five and six thousand people. I don't think that is realized. That is throughout the United States.

When I joined Sir Charles Gordon in July last, I thought I was going down for a month or two months to help get things started, and then come home. I am still there. The American people were then organizing, perhaps one of the most important—remember, gentlemen, I am only talking of the commercial end, don't lose sight of that fact—as I say the American people were then organizing perhaps one of the most important bodies. They organized the War Industries Board at that time under the chairmanship of Mr. Scott, who afterwards had to retire. The War Trade Board was also organized. A good many of you have had trouble with it. The War Industries Board, I think, is the biggest body commercially in Washington to-day, and from the War Industries Board they have formed a Purchasing Commission. The Allies hold twice a week an allied conference, at which all the allies are represented, generally by two representatives. I have the honor of representing Great Britain at that meeting on Tuesday and Thursday. It is presided over by Mr. Carr, manager of the Allied Purchasing Commission, and at that meeting we,

practically speaking, lay our cards on the table. That is, Great Britain wants certain goods, France may want similar goods, Italy may want similar goods, and it has got to be then decided what portion of our requirements we can get without interfering with the other fellow. It may be we can get them all, and I will say this for the gentlemen whom I come in contact with, that they do everything in their power to help us. They are not in this war in any small way or petty way; they are in this war as part and parcel of the allies.

The Fixing of Prices

Another step that has been taken which I think is very important, is the fixing of prices. A year ago, taking iron and steel as an example, steel plate in the United States was selling at from eight to ten cents a pound. I think anybody who knows anything about it will agree with me when I say it was a most iniquitous price. One of the first steps taken was to fix the prices of iron and steel from pig-iron up. The result of it is that steel plate to-day is on a fixed basis of three-and-one quarter cents. When you realize they have not only fixed these prices for the United States, but that those prices rule equally with every one of the allies—you can get the same price to-day, that is Great Britain or France, or anybody, that the American pays for that plate—when you realize Great Britain is buying thousands and thousands of tons of steel plate alone for shipbuilding, you can fancy the millions of dollars that are in that way saved. Copper, if my memory is correct, was about 30 cents. They said No; they put copper down to 23½ cents. Almost every line is fixed in regard to price as it stands to-day, and those that are not, that are of any importance, are under review.

The British War Mission look after the supplying of Great Britain with all the requirements that she has from the United States. It doesn't matter what that line is—if it is to come from the United States, it comes through the British War Mission. Consequently, the scope of the Mission is very large. The actual buying is done in New York, under the very able directorship of Mr. J. W. Woods, of Toronto. The fixing of the prices with the Government is done in Washington. We get notice by cable from England of what is required, we attend to it, and pass it on to the Purchasing Department.

What the United States is Doing

In regard to the general activities in the United States, outside of the men they have sent over, I don't think there is a man in the room who has not heard of or read some comment of some kind on the Liberty motor—that they are not getting them out. Well, we don't all agree, but I can tell you, gentlemen, that Liberty motors are being turned out and in quantities. With regard to shipbuilding, a great many people thought that the United States ought to start the following day and send a ship off. They went into it on an enormous scale. I don't give this as absolute, but I understand in one yard they laid down 53 ships at one time and 53 more behind them, making 106 practically under way at one time. When the first 53 take the water, the ones behind are shoved

* Address delivered at annual meeting, Canadian Manufacturers Association, Montreal.

on to those ways and another 53 put in behind. It was on account of the enormous way they went into it that at first a great many of us were inclined to think they had not speeded up, but I think you will find in a very short time that ships will be coming out quicker than anybody ever dreamed they would.

Organized on War Basis

The nation as a whole to-day is organized on a war basis. You see it in a great many ways—in war trade, and you don't get a bowl of sugar any more, you get an envelope. Some people do not live up to it, but that is the general rule in Washington. And everything is on the same basis. The people are in it heart and soul, and I think it wonderful the way they turned out a week or two ago when the Red Cross went out for \$100,000,000, and thought if they got it they would do well, and they came back with \$175,000,000.

Now, gentlemen, I would like to say a word to you in regard to the feeling as I have experienced it—I am giving my personal experience in this case only—the feeling that the United States has to-day for Canada. (Some of you know probably—I hope all of you do—what it is when the small boy comes home and says he has got first prize. You say, By golly, you have done well. That is exactly the feeling that is in Washington to-day for Canada—you have done well. I happened to be sitting in at bridge the other evening, and there were three Americans, and one of them made a remark about the Red Cross, what a wonderful success it had been, and the enormous amount of money being collected, and my partner looked at him for a minute, and he said, you forget that my partner is a Canadian. (I didn't know what was coming.) He said, if you had looked at the *New York Times* a short time ago you would find that Canada had given, per capita, more dollars than we have given nickels, and to equal the men that Canada has sent to the Front, we have got to put an army in the field of eleven millions. The gentleman who made the remark in regard to the success of the Red Cross said, I wasn't thinking of Canada, we know what they have done.

The Feeling Towards Canada

Gentlemen, I think that will give you some idea of the feeling towards Canada. There is hardly a day goes by, and points come up very often at our conferences, between Italy, France, Belgium, Great Britain and the United States—and until recently Russia was represented—some questions come up, and the Chairman will turn either to myself, or Mr. Stewart, or my assistant, and say, What did you do up in Canada about that? It makes me very proud when I hear that remark. Recently they took up the question of the conservation of man power, and shipping and other important things. To-day it is practically impossible for any manufacturer in the United States—in fact, it is impossible—to undertake an order that is to be exported overseas until he has first secured the permission of the War Trade Board, the idea being that he may waste his manpower and all the rest of it, and then find he can't ship it. He has got to get his export license first, and then he has it vised and approved by the Board, which means if he is able to get material to manufacture and get his shipping space, he is at liberty to go ahead. They will not accept any export license for any of the Allies until that license has been signed by the authorized representative of the mission of the nation in question. That has thrown a great deal of work on the various missions, but I think it will have a very good effect.

There is one other remark I would like to make. Our esteemed President to-day, in his address, remarked about what the Canadian manufacturers had done for the war. Now, it may seem a little bit strange, but I went a little bit

further when I heard those remarks, and I was just wondering what had the Canadian manufacturer done for the war, in Washington? And, naturally, being a member of the Canadian War Mission, I looked there first, and I found that the Director General of War Supplies for Great Britain, Sir Charles B. Gordon, was one of our past presidents; your humble servant, your second vice-president, is deputy director, and Mr. J. W. Woods, of Gordon, Mackay & Co., Toronto, director of purchases in New York. I then looked at the Canadian War Mission, also established and doing a wonderful work in Washington on behalf of Canada. I think a good many of you know a number of orders that have come through for which they are responsible. Mr. Lloyd Harris, of Brantford, is representing the Canadian, also representing the Imperial Munitions Board, and his deputy is Mr. Frank Rolph, of Rolph, Clark, Stone, Limited, Toronto, and Mr. Ross McMaster, director of steel supplies. So that I found individually the Canadian Manufacturers Association was very well represented and doing its bit in Washington. And I want to say that these gentlemen, including myself, are volunteers, and that not one man in the party gets a sou marque for his services. So that I think, while we can't do anything collectively, yet individually the Canadian Manufacturers Association on war activities, as I have to deal with them in Washington, are doing their bit.



—B. and C. Press Photo

T. P. Howard

Phenix Bridge and Iron Works, Limited, Montreal
First Vice-President, 1918-19, C.M.A.

Mr. Howard's career has been associated throughout with the City of Montreal, where he was born in 1869. After receiving an education at the Montreal High School and the Montreal Business College, he took a position with the Grand Trunk Railway Co. Later he was connected with the Park Steel Company and James W. Pyke & Co. In 1898 he organized the Phenix Bridge & Iron Works Co., of which he became and still is the managing director. In addition to this, Mr. Howard is vice-president of the Structural Engineering Co., and director of the Canada Envelope Co. He has been a member of the Executive Council, C. M. A., since 1909, and was chairman of the Montreal Branch in 1913-14.

The Conservation of Canada's Export Trade*

Vital Importance to the Dominion of Keeping Alive a Trade in Manufactured Commodities After the War, in Order to Help Support the Immense Burden Imposed by the National Debt—Necessity of Co-operation Between Government and Manufacturers

By HON. FREDERIC NICHOLLS

MR. CHAIRMAN and gentlemen: I do not intend to occupy much of your time. When I was invited to address this Association I said I would be glad to have the privilege of doing so for a period not exceeding fifteen minutes, and I think a great deal of information can be compressed into that time.

I shall be brief because probably most of you are familiar with the fact that as a matter of public service I have attempted to draw the attention of the Government and country, through speeches in the Senate and different articles in periodicals, to the necessity of preparation for after-war conditions. A great deal of that information, which I will not bother you with now, was published in a pamphlet entitled "Conservation of Canadian Trade," and I will be pleased to send a copy to any one who desires it. I therefore feel that I can gloss over the subject, which is pretty familiar to you all, but by giving you a few facts I hope to be able to insure your co-operation in the work that I and others are undertaking.

Present Balance of Trade

At the present moment the balance of trade is greatly in our favor. In 1917 our exports were \$1,000,100,000 more than in 1913, the year before the war, an increase of no less than 254 per cent. Now, a great many people would run to the conclusion that that great increase of exports was largely made up of agricultural and animal products, but an analysis of the Government returns shows that of the increase of \$1,000,100,000 no less than \$628,000,000 or more than one half of the total, was an increase in the export of manufactures. Agricultural and animal products increased \$440,000,000. So that industry provided 50 per cent. greater increase in exports than agriculture.

Who would have thought two or three years ago that this country would have so rapidly adapted itself to new conditions that we could have manufactured and exported munitions to the extent of \$30,000,000 per month? To my mind, and I have had some experience in various branches of manufacture, there is no branch that requires more accurate and more precise skill than the manufacture of munitions, and especially under Imperial inspection, and yet we have done that business and have done it well, and we have received commendations from the authorities that be. But unfortunately, gentlemen, all that business is not permanent. The increase of \$440,000,000 of agricultural exports may be considered as permanent because the world will still require natural products as the population continues and increases, but we hope, notwithstanding the effect it may have on our national life, that the world will not continue to demand hundreds of millions of dollars of war material for any great length of time. Therefore it behooves us to consider soome method of preparedness whereby we will be able to meet after-war conditions and provide in some way, shape or form that the hundreds of thousands of work people engaged in war indus-

tries shall not be without employment and that the hundreds of millions of dollars invested in plant and material shall not remain idle, and it is to that problem I have been devoting more or less attention during the last year or two.

Another thing you must remember is that the \$440,000,000 of increase of agricultural exports is subject to little or very little taxation, whereas the \$600,000,000 of increase in manufactured exports is subject to taxation and super-taxation, and has gone a very great way to enable Canada to bear its war burdens up to the present time.

Importance of Successful Industry

Now I do not think the importance to the national finances of successful industry can be over-estimated. Our net debt at the end of the year on which interest and sinking fund must be paid, will amount to \$150 per head, or no less a sum than \$750 for every average family of five. In 1913 the interest and sinking fund on the national debt per capita was \$1.70. At the end of this year it will be \$10 per head or over 500 per cent. increase during the four years that have passed since the war started. These are startling figures. It is not going to stay at that. We here who are living in this country and who are proud to call Canada our home, have got to provide ways and means whereby we are able to continue to live under this burden and hold our heads up high in the face of the world, because we will not consider any method of evading our honorable debts incurred in the defence of the Empire.

At the present time it is easy to raise capital and revenue, as witness the immense success of the last Victory Loan, and I hope the next loan, to come on later in the year, will be equally successful. A successful country can subscribe for loans, and a war profits tax and income tax can be collected to help us carry this burden while the country is prosperous, but if at the end of the war our tremendous export trade vanishes into thin air, where are we going to get the wherewithal to meet our burdens? And therefore I have endeavored in the Senate, in the press and elsewhere, and I am glad to have the opportunity briefly here and now to impress upon everybody I come in contact with, that it is up to ourselves, but more particularly up to the Government of the day, to give us a lead in making preparations for conditions which we will most surely be called upon to face.

Manufacturers Show Adaptability

I pointed out that our manufacturers have shown great adaptability. I was told when I was in England last by very high officials in the War Office and Munitions Board that Canada had shown greater adaptability in catching up with the manufacture of munitions than they had done in Great Britain itself. But while we can adapt ourselves as manufacturers, we heretofore have had little if any experience in catering to an export trade, and no matter how aggressive we may be I doubt whether we would be able of our own initiative to in any way be able to make up the loss of trade

* Address delivered by Senator Nicholls at the annual meeting of the Canadian Manufacturers Association, Montreal, June 13, 1918.

unless through Government aid and co-operation. For instance, let me give an illustration. We have received orders and have been shipping munitions at the rate of \$30,000,000 a month.

Now, how was that brought about? How were we able to secure that trade? If every manufacturer who thought he could make munitions went abroad and tried to secure orders I venture to say that a very, very small proportion of the orders would have been secured, but the Imperial Munitions Board brought about co-operation in industry and mobilized the manufacturers up to a point that they were able to be of service to themselves and to our own country and to the Empire. Therefore I believe, Mr. Chairman and gentlemen, that the only way we are going to be able to prepare for after-war conditions and an export trade in articles we either manufacture now or can adapt ourselves to manufacture, like we manufactured munitions, will be by co-operation on the part of the Government and manufacturers.

For instance, should the Government co-operate we will eliminate all trade jealousies. That is a very important matter. We will eliminate trade jealousies and command respect. A quasi government organization would receive the respect of the commercial community throughout the world. Another thing, a quasi government organization, such as a Canadian trade corporation to act in the same capacity as the Imperial Munitions Board, would have prestige and be received in an entirely different manner to what the representative of even the greatest industry in Canada would be received in foreign countries. Therefore I ventured to bring this matter before the Senate during the last two sessions of

Parliament. As a result there was a special committee of the Canadian Senate appointed on the conservation of Canadian trade. They made a report to the Government and subsequently had a conference with a committee of the Cabinet, who expressed themselves as entirely sympathetic with the proposals that have been placed before them by this special committee of the Senate on the conservation of Canadian trade. But as you know, very shortly after the Parliament prorogued, the election came about, and the Cabinet have been very busy with what you might call a short war session. But without betraying any confidence, because I am only doing this as a matter of public service, not in any personal capacity, and have no private interest to serve of any kind or nature whatsoever, I may say immediately before Parliament prorogued I had a conference with Sir Robert Borden, who asked me to write him again and I venture to read some of the correspondence. (Senator Nicholls here read certain correspondence showing the sympathetic attitude of the Government towards his proposals).

So, Mr. Chairman and gentlemen, you see something has been accomplished; the Government are receptive; and I think if a resolution were passed at this meeting in sympathetic accord with the efforts being made towards preparedness for after-war conditions it might be of service.

I have endeavored to rush through my remarks as quickly as I could. I may not have done the subject justice. I may not have done myself justice, but I know how late the hour is, and I trust that you will pardon the more or less disjointed remarks as time alone has prevented my placing the subject before you in a more comprehensive way.

Resolutions Passed by Montreal Convention

Provision for Post-War Conditions, Scientific and Industrial Research, Industrial Housing, Fire Prevention and Conservation Were All Dealt With
by the Committee on Resolutions and Were Crystallized
in the Following Paragraphs

SIX resolutions were presented to the annual convention at Montreal by the Committee on Resolutions, and duly approved by the Association. A seventh resolution, dealing with industrial alcohol, was presented direct by Mr. Thomas Roden, and, being referred to the Executive Council, was duly approved at the Council meeting held in Toronto on June 21. It is, accordingly, appended to the other resolutions.

Post-War Conditions

That the Canadian Manufacturers Association, in annual convention assembled, unanimously resolve:

That the Government of Canada be urged to take prompt action towards making provision for post-war trade conditions to the end that the present favorable balance of trade may be continued, and that the employment of several hundred thousand people now employed in war industries may not cease.

That this Association is further of the opinion that the plan outlined and submitted to the Government by the special Committee of the Senate on Conservation of Canadian trade or some modification thereof would, if adopted, result in permanent benefit to the country at large, and also be of material assistance in the financing of our great national obligations incurred as a result of Canada's war effort.

That a copy of this resolution be forwarded to each member of the Federal Cabinet.

Scientific and Industrial Research

Whereas in the principal industrial countries the application in industry of results obtained by scientific investigation is recognized as a most important factor in maintaining a high industrial rank and increasing national prosperity;

And whereas, realizing that it is not purely an industrial problem, but for the ultimate public good, Governments of the principal industrial countries have set aside large appropriations for the assistance and encouragement of scientific research as applied in industry;

And whereas the immediate Government provision in Canada for the application of scientific discoveries in industry is at a minimum;

And whereas industries have guaranteed financial co-operation on a considerable scale for a period of years, provided Government action is forthcoming;

Be it therefore resolved, that the Toronto Branch of the Canadian Manufacturers Association, in annual meeting assembled, recommend to the annual convention of the Canadian Manufacturers Association that it strongly urge the Dominion Government in prompt action:

(1) To provide for the appointment of manufacturers in representative industries on the Honorary Advisory Committee of Scientific and Industrial Research on a basis equal numerically to the academic representation now thereon.

(2) Under the supervision of the Honorary Advisory Committee in co-operation with the industries on terms to be

agreed upon, to establish, equip and maintain a laboratory for conducting scientific industrial research and furnishing information, relative to new processes, properties, inventions, improvements and materials discovered therein as may seem capable of use by interested manufacturers.

(3) To provide funds to carry out this project or another similar plan suitable to Canadian industrial conditions, which plan shall have the same end in view.

Industrial Housing

Whereas a serious situation exists in many industrial centres in Canada because of the lack of adequate housing accommodation at reasonable rates, creating living conditions that menace the industrial, social and political welfare of the whole country;

And whereas it has been demonstrated that private initiative, unaided, operating through the law of supply and demand, does not meet adequately the housing requirements of progressive communities;

And whereas in all the principal countries of Europe, in Australia, and in Ontario, Government responsibility for the improvement of housing has been recognized by legislation providing for the advance of the public credit in various forms and varying degree in furtherance of improved housing undertakings, and in the United States, the National Government has recently appropriated \$100,000,000 to provide housing for shipyard workers and those engaged on war contracts;

And whereas Great Britain which, for a generation has led the world in housing betterment, recognizing that adequate housing is essential to industrial efficiency, has spent, since the war began, \$300,000,000 in providing most approved housing for war workers, and as a part of its reconstruction programme after the war is planning for the erection of at least 500,000 houses;

And whereas we believe that adequate housing facilities are essential to industrial progress and national wellbeing;

Therefore be it resolved that the Canadian Manufacturers Association in annual convention assembled holds that it is urgently incumbent upon municipal, provincial and Dominion Governments to seriously consider the whole question of housing reform, that plans may be laid for the provision of adequate housing facilities looking towards the increase of home ownership, and that measures be taken for an early realization of these plans.

Furthermore, it is respectfully suggested to the Dominion Government that immediate progress can be made by enlarging and emphasizing the work of the Housing and Town Planning Branch of the Commission of Conservation; and to the Provincial Government that arrangements should be made to hold a provincial housing conference at the earliest date possible for the assembling of information and the consideration of ways and means in regard to the whole question of housing betterment.

Commission of Conservation

Whereas the Commission of Conservation of Canada has been largely responsible for the development of favorable public opinion on the perpetuation of forests, their safeguarding from fire and pests; the valuable information accumulated by them bearing on our enormous fire waste; the improvement of housing conditions in congested localities; the establishment of proper methods of general fire prevention; the beautifying of municipalities and betterment of living and social conditions; the economic utility of systems of good roads and the prevention of the alienation of water powers, land, minerals and other natural resources;

And whereas the public opinion so created has become crystallized in the form of municipal regulations, Dominion and provincial legislation having in view the eradication of existing evils pointed out by the Commission;

And whereas there is still great necessity for the stimulation of public interest in best methods of conservation of

resources, material, human, and all others for which the Commission has devised an organization admirably fitted for, and capable of discovering;

Be it therefore resolved, that the Canadian Manufacturers Association in convention assembled record its deep appreciation of and continued interest in the work carried on by the Commission of Conservation and its high approval of the efforts of the Commission to promote the development of natural resources on a basis which ensures continuous supplies and eliminates extravagance and waste.

Fire Prevention

Whereas Canada's annual fire waste is shown by statistics to be the highest of any community in the world;

And whereas losses are thereby sustained in valuable food-stuffs, commodities, resources and equipment difficult to replace;

And whereas, particularly in view of the urgent demands of the war, a continuation of the present conditions is fraught with serious danger to our economic strength;

Therefore be it resolved that the Canadian Manufacturers Association in annual convention assembled most strongly urges this most important matter on the attention of the provincial Governments, with a view to the promulgation of such Orders-in-Council or other legal measures capable of being brought into effect promptly, and the inauguration of such policies as will best conduce to the control of this serious source of loss;

Be it further resolved that the members of the Canadian Manufacturers Association hereby pledge themselves to co-operate with the Government action by assisting in the establishment of the prevention associations in their own locality.

Vote of Thanks

The Canadian Manufacturers Association tenders its hearty thanks:

(1) To His Worship Mederic Martin, mayor of Montreal, for his warm welcome on behalf of the city of Montreal.

(2) To the Officers and Members of the Montreal Branch for their generous entertainment, and for the arrangements that have contributed so much to the success of this meeting.

(3) To the speakers who have interested and inspired us by their forceful presentation of practical things.

(4) To the Harbor Commissioners of the Port of Montreal and the Canada Steamship lines for their kindness, forethought and hospitality.

(5) To the Engineers' Club, St. James Club, Outremont Golf Club, Beaconsfield Golf Club, St. George's Bowling Club, Westmount Bowling Club, and the Montreal Art Association, for privileges so kindly extended the members of this Association while in session here.

(6) To the Management of the Windsor Hotel for the care and consideration shown for the comfort of their guests.

(7) To the Press of Montreal for the full and impartial manner in which they have reported convention proceedings.

Industrial Alcohol

Whereas the fact that alcohol for industrial purposes, free of duty, has contributed much to the prosperity of several countries;

And whereas Canada has a number of distilleries now lying idle;

And whereas new processes are now available for making alcohol from non-edible materials;

And whereas the Dominion has an unusual opportunity of extending its industries in many directions;

And whereas a new source of motor fuel is desirable;

And whereas alcohol is not now an important source of revenue;

Be it resolved that the Canadian Manufacturers Association, in annual convention assembled, request that the Government be petitioned to permit the use of excise duty free alcohol, subject to restrictions which would protect revenue and public safety.

Organization for After-the-War Problems*

An Effort to Unite the Business and Financial Interests of Canada, in Most Sympathetic Association With Agriculture, to the End that the Brains, Resources and Energies of Canada May be Concentrated on the Great Problems of Reconstruction

By SIR JOHN WILLISON

President, the Canadian Industrial Reconstruction Association

MR. PRESIDENT and gentlemen, owing to the hour that we have reached I feel that I will have to be pretty brief, though I will endeavor to present at least a few suggestions or a few arguments on the subject on which I am expected to speak.

It has been a privilege to hear the address of the President, and the address by Mr. McKenzie, of the Grain Growers' Association, and if I have listened intelligently it does seem to me that there is some slight difference of opinion between them as to the sound fiscal policy for Canada. (Laughter). I shall not attempt in the time at my disposal this afternoon to reconcile the differences. I will leave that to the conference at Winnipeg, convinced that if each party to the conference goes to Winnipeg with the sole idea to reach conclusions that are in the interest of Canada, then any differences between the East and West can be adjusted.

I have often said, Mr. President, that if the officers of the Grain Growers' Association could conduct the affairs of the Manufacturers Association for six months, and if the officers of the Manufacturers Association could conduct the affairs of the Grain Growers' Association for that length of time, they would so understand the conditions in the East and West that we would have substantially an end to the tariff controversy in Canada.

The West has proved by its sacrifices in this war and by its devotion to Canada and the Empire and to civilization, that its patriotism is as intense as that of the East; that they are as greatly concerned as we are for the welfare of Canada and the welfare of the Empire; and all we need in order to reach the understanding which is in the supreme national interest of Canada is that we shall know one another better and understand our problems as they present themselves to us in the various sections of the country in which we live.

Ontario and Quebec

Will you allow me just to say one personal word which has no particular relation to the subject on which I am trying to speak. This is the first opportunity that I have had to speak in Montreal for some years. When I last spoke, *La Presse* and *La Patrie* and certain other French-Canadian newspapers were good enough to approve of the references I made to the Province of Quebec and the relations between Ontario and this Province. Since, I believe there has not been as much unanimity as there was at that time, but what I want to say to-day is this, and I think I speak for the Province of Ontario, that among the great mass of our people, whatever may be the racial expressions to the contrary, there is only a sincere desire for good relations with the Province of Quebec and with the French-Canadians, and the only aspiration we have for this Province is that it shall have an equal voice in the Government of Canada, an equal influence in its affairs according to its population. I am say-

ing that as expressing my own position and as expressing what I believe is really the deep sentiment of the Province of Ontario.

Now to go to my subject. When the war is over, between two hundred thousand and two hundred and fifty thousand men will be released from munition factories or from the manufacture of war supplies; there will come from the Old Country home again between three hundred and fifty thousand and four hundred thousand men. We will have to adjust ourselves in Canada to the restoration to civil pursuits of between six hundred thousand and seven hundred thousand in a population of seven millions and a half or eight millions. Those figures I leave without discussion. On the other hand the most that we have ever raised in any one year for revenue in Canada is \$170,000,000. It is certain that when the war is over, if it lasts another year, we will have to raise a revenue every year of between \$350,000,000 and \$400,000,000, and the sum will be nearer \$400,000,000 than \$350,000,000. Therefore, we have to provide \$230,000,000 of revenue every year in excess of the revenue we have raised in past years in our history.

Must Expand Industries

Now the lesson I want to draw from those figures as affecting the number of men who will have to be re-established in civil pursuits, as affecting the revenues we will be required to raise—the lesson I want to draw is this, that we must expand our industries to the utmost extent, that we must utilize our raw material in creating new industries in Canada to the utmost extent; that we must not only use every endeavor to increase settlement on the land, but that the burden upon those who settle on the land will be enormously heavy if our industrial population is depleted or if our industrial population is not greatly increased in the years to come. I am of the opinion, whether I am sound or not, that the country that will make the greatest progress during the next quarter of a century is the country that has the greatest store of natural resources; and that the sound national policy for Canada and for any other country is to develop its natural resources within its own boundaries and so far as possible in the interests of every element of the population carry manufacture to the last possible extent within its own boundaries. I am persuaded that if we are wise in determining our national policy between now and the return of the men from the front, if we settle upon sound lines of policy and continue to pursue such lines of policy, that we may be upon the eve of an industrial, educational and agricultural expansion in Canada beyond anything we have ever experienced or beyond anything that we have ever dreamed about.

It is a fact that the basis of the commercial supremacy of Great Britain, if I read history aright, was laid during the long war with France. When the Americans at the close of the civil war were concerned about their future problems as we are concerned to-day, when they were driven by the

*Address delivered before the annual meeting of the Canadian Manufacturers Association at Montreal, June 12, 1918.

impetus of necessity to raise great revenues, when they faced a period of uncertainty and apprehension, all their energies were so strained to take advantage of an unusual situation that there began the amazing commercial expansion which has since characterized American history; and the historians who have studied these subjects all agree that the secret of the amazing prosperity of France, its wealth, its ability to supply money to all other countries, to the fullest attainment of its population, that the spirit which produced those results in France, originated under the strain of paying the enormous indemnity to Germany after the war of 1870; and, therefore, I say that if we utilize our natural resources to the best extent, if we are a united people, if we make national considerations the supreme consideration, if we understand, as I think we ought to understand, that there is no necessary conflict between agriculture and industry in Canada, we can have just such a future as I have been trying to portray.

Scientific Training and Research

One other subject. The last thing I have in my mind is to undertake to teach manufacturers their business. I am not a manufacturer, although some of my critics say for many years I was a manufacturer of fiction. Whether I was or not we will not stop to discuss this afternoon. But I do think, Mr. President and gentlemen, that we must give greater attention than we have given to technical and scientific training and scientific research.

The words "German efficiency" are passing in their significance to the United States, and I don't believe that in the world to-day, if I know anything about the subject, that there are universities as well equipped for scientific training and for research, or great institutions devoted to these objects—there are not such institutions anywhere else in the world—that compare favorably with those in the United States.

I remember a conversation with Lord Haldane, not that I often talk with Lords, but I did on this particular occasion; I remember a conversation with him after his visit to Canada, and he said this: "Twenty years from now the universities of Europe, of Germany, of Great Britain, the universities of the old world in all that concerns the science of production will be years behind those of the American continent, and unless we are vigilant, as we ought to be, the future industrial supremacy passes inevitably to the United States and Canada, if Canada is as active and vigilant as our neighbor across the line."

Large Sums on Research

What is the fact? I am told, and I am sure the figures are correct, that in the United States to-day there are fifty industrial firms and corporations which are spending from \$25,000 to \$400,000 a year purely and absolutely in industrial research, and we are far behind—much reverence as I have for the universities of Canada, we are far behind Harvard and Wisconsin and Columbia and others of the great universities of the neighboring country in our scientific departments, while we have no such institutions as the Mellon Institute and the Massachusetts School of Technology. The business men of Canada, not only the manufacturers, but the bankers and the railway companies, and the business and financial interests of this country and the Governments ought to unite with the business men to see we have the industrial equipment, the equipment for scientific training and industrial research which this country requires, and even if the sum be great to provide it, it has to be provided if we are as careful of our future as we ought to be.

One other word on another subject. I believe, although I may be wrong, that they are going to have a revolution in

industrial policy in Great Britain. We cannot be certain, but in so far as I read all the utterances of the commercial bodies in Great Britain and the public men of Great Britain, with few exceptions, they do point to this resolution, that for the future Great Britain will make it a supreme condition of national policy that she shall be able to feed herself. Not that she may always feed herself, but that in any crisis she will be capable of feeding herself. If that is the policy of Great Britain for the future, the export market for Canadian grain in Great Britain will be substantially impaired, and there will be, if I may touch the tariff for one moment—I don't want to dwell on the tariff to-day—there will be infinite need for the industries in Western Canada, just as in Eastern Canada, if their towns are to grow, if they are to be able to meet their municipal debts and if they are going to keep their people in their own country.

Now, whether or not we have preference with Great Britain; whether or not we should have preference with Great Britain, I am not going to discuss this afternoon. My point of view is we often confuse loyalty to England with loyalty to the Empire. The Empire is in Canada just as much as it is in the United Kingdom or in Australia or South Africa, and it is wholly legitimate for the people of Great Britain to settle the commercial policy which is in the interests of the people within the United Kingdom as it is legitimate for us to determine on the commercial policy which is in the interests of the majority of the Canadian people; and just in so far as we have freedom between the parts of the Empire in all that concerns our local affairs and in all that concerns industrial policy, just to that degree will we be a more united people and will we have a stronger and more secure Empire. Always subject to this consideration, that in so far as consistent with local interests we can make the interests of the Empire supreme it is our obligation and duty to do so.

Relations with Labor

Now, there are many other questions I would like to consider, but you have had a good deal of speaking this afternoon and I don't propose to detain you at any greater length. If I may say one word, I would like to touch the question of labor. It was my privilege to work, and to work side by side with organized labor for thirty-six years, and looking back over all that period I want to pay my tribute to the reasonableness of organized labor when there was a sympathetic and proper understanding with the directors of the enterprise in which I was engaged; and I believe that the spirit which was manifested in the industry with which I was connected is the spirit that may be developed in all kinds of industry. Let me, however, offer this one qualification: I would be wholly insincere if I suggested that all the faults in dealing with labor are on the side of the employers. I know that labor unions are often unreasonable and often arbitrary, but if we can establish between the heads of the great manufacturing enterprises and the employees the relation I would like to have established between Eastern and Western Canada, I believe that many of the difficulties from which we have suffered in the past would be obviated and we could have greater efficiency in our industries because of the better understanding with labor, which would result from more frequent conferences between those who work and those who direct, all of whom have an equal interest in the success of the industries in which they are concerned.

The question is asked quite often, why concern yourselves with reconstruction in Canada until the war is over? Well, that is not the view of Germany. More than that, if we had not neglected preparations for war, as we are sometimes advised to neglect preparation for peace, the German armies would not be within forty or fifty miles of Paris. Anyone

who follows the German literature of preparation for forty years knows, as Mr. Gerard, who was American Ambassador to Germany, says, that already scores of vessels are building in German shipyards in order to recover at the earliest moment their overseas trade when peace comes. We have had evidences that already German agents are seeking to accumulate raw material in neutral countries and in various parts of the world wherever, by any sort of device, raw materials can be obtained and concentrated. They believe that the war will end with their territory unviolated by armies, that they will be in a position to re-establish their industries more quickly than those of other countries can be established or adjusted to ordinary commercial manufacturing. I am not sure it is so. All depends on whether or not the Allied nations give Germany access to the raw materials which Germany must have if she is to have any early restoration of her commercial supremacy; and we people of Canada have to make our voice heard as to whether or not the raw materials of this country shall be available for Germany in the years immediately succeeding the war. I know it is good Christianity to love your neighbor, but if Christianity requires me at this moment to love Germany I am not a Christian.

Object of New Organization

Now, just one word about the Association with which I became really accidentally connected. The only qualification I claim for the position to which I have been appointed is that for thirty years I have been a student of public questions—wisely or unwisely, with results or without results, I have nothing to say. But it is a fact that I could stand here I believe for thirty minutes nearly giving you the names of the organizations that have been created in the United States and Great Britain to deal with conditions that will follow the war. Those countries are at least two years ahead of us, and we, who according to our population will have as great a problem as any other country in the world, have given very little study to reconstruction as yet; have made very little preparation either by the Government or industrial bodies for conditions that will follow the war. What we have had in mind I think is logical and wise and valid, and for this reason, they are already discovering in the United States and Great Britain that perhaps they have created too many organizations, and the chief motive behind the organization that we are trying to create is to unite the business and financial interests of Canada in most sympathetic association with agriculture so that we will have no overlapping, no waste of energy and so that we can concentrate the brains and resources and energies of this country upon the great policy, upon the great problems of reconstruction upon which the future of Canada so greatly depends, because in the next two or three years we shall determine whether we will continue moderate progress, moderate prosperity, or whether we will go on by leaps and bounds to a prosperity and expansion above which, as I have said, few of us have dreamed in the course of our day.

No More Plugs

A small catalogue that talks almost entirely through the medium of pictures has been issued by the Trussed Concrete Steel Co. of Canada, Limited, Walkerville, for the purpose of demonstrating the utility of Truscon spot grounds for attaching wood or metal trim to walls, screeds to floor slabs and for securing plumbing, electrical fixtures, etc. It is pointed out that the old style of grounding by means of plugs is costly and in many cases uncertain. The Truscon spot grounds overcome all these difficulties.

The Promotion of National Unity

Canadian Manufacturers Association Has a Bonne Entente in Every Province of Canada

In welcoming the members of the Association to the 27th annual meeting in the metropolitan city of Montreal, the president, Mr. S. R. Parsons, said, "It is fitting that after meeting elsewhere for several years we should now come back again to this great commercial centre. We know of the hospitality we have experienced in the past, and we are quite well assured that this will be extended to us during the days of our meeting here again this time. It is not only fitting on



Snapped at Montreal

The Association's new second vice-president,
J. S. McKinnon, of Toronto

account of the great commercial importance of Montreal that we should meet here, but it appears to me that one thing in particular is emphasized by our meeting in Montreal, the home of the two chief races of our Dominion. I think if the Canadian Manufacturers Association stands for anything outside of its commercial importance and the things which we naturally discuss and which come into our everyday problems as manufacturers, that one thing has characterized us, and that is that we have a real 'bonne entente' in every province. I don't believe that any organization has ever been of more value in cementing our two races together and trying to make one harmonious whole and in serving the great question of national unity to a greater extent than our own organization."

REPORT OF THE EXECUTIVE COMMITTEE

IN submitting its report to the Forty-seventh Annual General Meeting of the Association, your Executive Committee regrets having to meet again under the anxious strain of war, with its suffering and loss of men and property.

Our departments have all been unusually active, and under the direction of capable and hard working committees, have rendered excellent service.

In the matter of finances, your Committee are pleased to be able to report a surplus for the year ending 30th April, 1918, of \$2,097.47.

The increase of membership fees which became effective on 1st of August last, is already being appreciably felt to the advantage of our regular income. The total revenue for 1917-18 was \$79,869.58, as compared with \$66,623.30 for the previous year. The net earnings from INDUSTRIAL CANADA were \$6,838.51, an increase on last year of \$706.52. The revenue derived from fees this year was \$14,802.65 in excess of last year. Our total expense account for the year just closed was \$72,651.73, as compared with \$64,637.59 for the previous year, an increase of \$8,014.14 (after crediting \$1,000 received this year for general expenses from the Wool Commission), due largely to the inauguration of new Branches at Amherst and Vancouver, and to the higher cost of supplies generally. The Wool Commission, which consists of five members of the Association engaged in the woollen business, and which acts officially for the Department of Trade and Commerce, has been housed in our Head Office since last May.

We began the new year with liquid assets of \$68,198.25, with accounts receivable, less reserve for bad debts, of \$8,830.48, and other assets of \$5,239.24. In the liability column, we show accounts payable amounting to \$3,148.21, and a liability to our members of \$31,699.53 for fees paid in advance and unearned; also one item of \$689.42 for INDUSTRIAL CANADA subscriptions and advertising, paid in advance. A sum of \$78.73 representing advertising charges due by insolvent debtors was written off the books. Our net surplus, therefore, on the 1st of May was \$46,730.81.

Investment Account

Your Committee purchased \$10,000 Dominion War Loan 5½ per cent. Bonds, maturing 1st December, 1927, at the price of \$9,910.80, on account of which they surrendered a \$5,000 Dominion War Loan Bond at a price of \$4,892.42. With this addition, the investment account now stands at \$55,193.33 par value, as against \$50,193.33 a year ago.

Canadian Trade Index

Although the current edition of the "Canadian Trade Index" is now more than half way through its second year since publication, the demand for copies is continuous, both for domestic and foreign use. In addition to a very extensive circulation among all large Canadian purchasing corporations, a carefully chosen list of purchasers of Canadian goods in all parts of the world has been provided with this book, and we have many assurances of its utility from these quarters. It has been of great service not only to individual merchants and manufacturers and corporate bodies, but the Association has been privileged to supply copies to the War Purchasing Commission, the Imperial Munitions Board, the British War Mission, the Invalided Soldiers Commission, the Canada Regis-

tration Board, the Census Bureau, the Canada Food Board, and many other large organizations. In some of these cases a great deal of revised material was inserted to render more efficient assistance.

Through the information gained by the compilation of the Trade Index, the department, of whose activities the Trade Index forms a part, has been able to form many connections for Canadian manufacturers with agents and purchasers in numerous export markets. On the same basis, information of considerable value has been supplied to manufacturers contemplating the addition of new lines of production. In some cases, too, estimates of production and consumption, supplementing other sources of statistics, have been made for the benefit of Canadian trade. In fact the Canadian Trade Index and its associated files have proved invaluable for many purposes closely connected with the war and the industrial life of Canada.

Industrial Canada

As shown in the financial reports, INDUSTRIAL CANADA has had another successful year, with a net revenue of \$6,838.51. It must be reported, however, that we have to face the new year with an advance in our printing costs that more than wipes out this prospective surplus for 1918-19. A special committee appointed to deal with the situation called for tenders for printing the paper without securing a lower offer. As a result, a new advertising schedule was approved which, it is believed, will place INDUSTRIAL CANADA again on a sound financial basis. This is the first advance in INDUSTRIAL CANADA's rates in ten years, and they are still comparatively low considering the quality of the publication.

It might be well to emphasize here the splendid service INDUSTRIAL CANADA is giving, in its special articles on the larger manufacturing problems, in keeping the members in touch with the general work of the Association, and with the progress of the special departments; and also through its advertising pages as a medium for informing the members of the new lines of goods being manufactured in Canada. INDUSTRIAL CANADA carries Canadian advertising only, and an examination of the advertising pages of an ordinary issue, and more particularly one of the special issues, gives one a most vivid impression of the resourcefulness and diversity of Canadian industry.

Your Executive propose to nominate a sub-committee to advise with the editor with a view to improve the reading and illustrated matter and to secure special articles for the magazine, written by trade experts, during the coming year.

Offices.

Besides its Head Office in Toronto, the Association now maintains Branch Offices in Amherst, N.S., Hamilton, Montreal, Quebec, Winnipeg and Vancouver.

In February last, your General Secretary, Mr. Murray, was invited by the Dominion Government to accept a position temporarily at Ottawa, as a member of the Canada Registration Board, and secretarial responsibility at the Head Office accordingly devolved on Mr. H. Macdonald, Assistant Secretary at Toronto. While thus performing an important public duty, Mr. Murray's services have always been available to us in an advisory capacity. In these strenuous days, everyone is called upon to render all the public service

he possibly can. The additional duties imposed by the greater volume of business made the work of the staff last year unusually heavy, a burden which was cheerfully borne.

Your Executive regret to report the resignation of Mr. F. P. Megan as Business Manager of INDUSTRIAL CANADA, who left the Association after several years of satisfactory service, having accepted a responsible and lucrative position with one of our members. While Mr. Megan's departure will undoubtedly be a loss to the Association, your Committee consider themselves fortunate in being able to report the engagement of a capable successor in the person of Mr. D. B. Gillies, who has several years of successful advertising experience to his credit and who by his education and sympathies is eminently qualified to discharge the duties that will be expected of him as a member of the staff.

Since the last Annual Meeting, the Library has been commenced as a distinct department, and has been put in charge of a librarian. At the present time it contains nearly five hundred books, including numerous general reference books. In addition to these, practically all the Government publications of interest to the Association are kept on file. Members are requested to make free use of this department.

British Columbia Branch

Your Committee have pleasure in being able to report that the British Columbia Branch has been re-organized under new officers, new committees, and with a good working set of by-laws. Mr. Hugh Dalton has been secured as Secretary, and commenced 1st of January last, in suitable offices that have been leased for the purpose in Vancouver. Mr. Dalton is highly regarded by the business men of Vancouver, who do not hesitate to predict that the British Columbia Branch will spring quickly into prominence, and give a good account of itself. Thus a long cherished plan of your Executive, in having a complete chain of offices extending from east to west, has been realized.

Communications

Your Committee took occasion to communicate with the membership on seven special matters during the year, as against four the previous year.

The first two were made, not on the initiative of the Association, but at the instance of the then newly appointed Fuel Controller, Mr. C. A. Magrath, who wished to utilize the services of this Association in obtaining quickly a reliable estimate of the bituminous coal requirements of those manufacturing industries in Canada, dependent upon the United States sources of supply. Later the Prime Minister, Sir Robert Borden, had asked the assistance of the Association in the all-important task of securing an adequate supply of labor for last season's harvest. Manufacturers were asked to make a canvass of their working forces, with a view to ascertaining the names of those who had farm experience, and to persuade as many in that class as possible to volunteer their services temporarily as farm help during harvest. This movement, initiated in the previous year, proved the means of materially increasing the supply of labor required by our farmers last season, and will doubtless be found beneficial during the coming harvest.

On August 1st, 1917, all the members were notified that by the decision of the last annual meeting, the amended schedule of fees became effective as of that date. The ready response accorded by the membership generally, indicated that they recognized the wisdom of the action taken by the Association.

Upon the issuance of the Proclamation of the Governor-General in Council, calling out the men in the first class for military service, your Committee secured and transmitted to members of the Association full and authentic information as

to the procedure to be observed by employers who felt justified in applying for exemption on behalf of men whom they regarded as indispensable to the conduct of their business.

We have given our pledge to see this war through to the end, and to assume responsibility for a sustained supply of men and money. Accordingly, when the call of the Government reached us asking our active assistance to make the Canadian Victory Loan a success, we applied to our members with the confidence inspired by a noble cause. Thus the Victory Loan became the most notable financial event of the year 1917 in Canada. In response to a request of the Canadian people by the Finance Minister to lend the Dominion Government \$150,000,000, the people offered \$419,000,000—a remarkable performance. The full significance of these figures is grasped only when bearing in mind that the Canadian people had



H. Macdonald

Assistant General Secretary, who was in charge of arrangements for this year's convention

already, since the outbreak of the war, provided the Dominion Government with \$350,000,000, the amount of three previous domestic War loans.

A statement was issued to our members, explaining that by positive acts, which left no room for argument, the Association had pledged itself to assist the cause of Union Government in the last general election—men from both political parties all standing firmly together upon a common platform of Military Service, and united in their determination to subordinate for the time being every other issue, in the one transcendent necessity of winning the war. Many expressions of approbation were received by your Secretary.

Just prior to the New Year, all large consumers of coal in Quebec, Ontario, and Manitoba, members of the Association, were warned by circular letter to see that their shippers in the United States fully protected their requirements in the matter of Export Licenses for the three months ending March. More recently, a circular has been issued, giving the names of technical men whose services were available for consultation by manufacturers wishing to make sure that their boiler plants were being efficiently operated. A list of "Fuel Saving

Don'ts" was also circulated, which many members welcomed as very practical advice for transmittal to the boiler-room.

Subsequently, a special committee was appointed by your Executive Council to study the Fuel situation, and your Executive are pleased to report with respect to peat fuel that definite operations are now in progress under the joint auspices of the Dominion and Ontario Governments. It is expected that supplies of peat fuel may be obtainable before the expiry of the present year. The Government's engineers have already reported in favor of this fuel, of which the quantity appears to be abundant.

In regard to our coal supply, it is gratifying to know that the attitude of the United States Fuel Administration is that Canada will receive practically the same treatment as the various states of the Union.

Your Executive, however, think that the time has arrived when we should set ourselves to a serious study of the question whether it is absolutely necessary that we in Canada should continue to be dependent on an uncertain supply of fuel from the United States, seeing that the coal reserves of Canada are practically inexhaustible, but need mining and distribution. Last year's output of coal may be estimated at 14,000,000 tons, one-half of which was produced in Nova Scotia, whilst Alberta, in the west, ranked second in output. But Canada, chiefly from shortage of labor and insufficient plant, imported over 20,000,000 tons of coal in the year.

Trade Sections

(1) GRAPHIC ARTS SECTION.

Authority was given to the Montreal Sub-Section of the Graphic Arts Section to engage the staff necessary to give its members practical assistance in connection with the installation of uniform cost accounting systems. While the Sub-Section, in its operations is enabled to use the prestige of the Association, the understanding is that all expenses incurred will be raised by assessment levied against each member on the basis of his mechanical pay-roll. The Montreal Secretary of the Association has been appointed Treasurer of the Sub-Section, and through him your Committee will be able to keep in touch with proceedings, and see that the general policies of the Association are in every way observed.

(2) AGRICULTURAL IMPLEMENTS SECTION.

The difficulties which lately confronted the manufacturers of agricultural implements and farm machinery showed the need for closer co-operation, and they thus formed into a Section in accordance with the by-laws.

The Alien Labor Question

Demands are being made that enemy aliens in this country be employed in work of national importance, or in industries essential to the war, the wages of each in excess of a Canadian soldier's pay and allowance to be retained for war purposes. It is also asserted that the Military Service Act should be made applicable to all allied and neutral aliens on the lines of the treaty between the United States and Canada.

Able-bodied aliens have been profiting by the shortage of labor, and those of military age have a special advantage over Canadian citizens. It is impossible not to show resentment at this discrimination in favor of foreigners, of whom many are secretly hostile to the cause of the Allies. The scarcity of labor, however, is so acute that the work performed by aliens—much of it of a class that Canadians do not court—cannot be sacrificed without serious loss in essential industries. A reduction in their earnings might bring a corresponding reduction in the volume of their labor through malingering or

absolute refusal to work. Those who were interned as a punishment would thus become a public charge. The case of allied and neutral countries is complicated by international law, but it ought not to be impossible to open negotiations with other nations in an effort to reach agreements similar to that with the United States. The option of enlistment or deportation is offered Canadians of military age in the United States and Americans of military age in Canada.

Meantime, your Committee has drawn the attention of the Canada Registration Board to this matter, coupled with the recommendation that appropriate regulations be prepared and promulgated.

Scientific and Industrial Research

Following the establishment in July, 1915, of a scheme for the organization and development of Scientific and Industrial Research in Great Britain, the Dominion Government constituted an Honorary Council of Industrial and Scientific Research. While this Council has not yet been adequately supported, nevertheless some progress has been made. Besides the ingathering of statistics, scholarships and fellowships have been established so that researchers may be trained and the scientific spirit fostered.

While in the United States, tens of millions have been appropriated by Congress to solve scientific problems, in addition to immense endowments by individuals and large expenditures by private companies, the Imperial Parliament voted five millions to promote research on a basis that puts many researches within the reach of comparatively small industries. The total vote by the Dominion Parliament to the Honorary Council of Industrial and Scientific Research was a little over \$90,000.

In the United States, the Smithsonian Institute and the Carnegie Foundation, privately endowed, provide some facilities for research. A number of universities have very complete laboratories for certain lines of research and the facilities are largely used. The Mellon Institute in Pittsburg enables manufacturers to undertake research in large and small problems on a financial basis in which the private endowment and the industry benefited share the cost. The United States Government established and maintains the Food Products Laboratory and the Bureau of Mines, where special problems not closely associated with industry are treated. The Government also maintains a Bureau of Standards, chiefly for the purpose of ascertaining the qualities of various raw materials and supplies used in Government purchases. These laboratories are open to the industries for the same purpose on a reasonable basis. A number of research and testing laboratories also exist as private enterprises. In spite of fair conditions created, good commercial developments, largely endowed foundations, and considerable Government effort, more concrete developments are under consideration by the Government.

In both United States and the United Kingdom, it is found that only the very wealthiest public service corporations, such as the telephone companies, or the most highly specialized industries, such as the British Westinghouse Co. or the General Electric Co., can afford to maintain extensive laboratories to conduct their own researches.

A Great Power Saving

It is estimated, to take only two instances, that the amount saved to the public in money that might otherwise be expended for power by the discoveries in connection with better filaments and gas fittings in electric lamps, comes to an almost unbelievable number of millions of dollars per annum. It is also incontestable that the United States Bureau of Standards,

by ascertaining required qualities of materials, for the stress to be put upon them and creating specifications therefor, has saved the United States Government enormous sums that would otherwise be spent in replacing unsuitable materials and commodities.

In Canada, the Bureau of Mines and the Forest Products Laboratory do useful work in their respective fields. The Honorary Advisory Council of Industrial and Scientific Research has applied its facilities for the better utilization of materials difficult to use in their present form or almost completely wasted. The materials that have been dealt with so far, mainly lignite and flax straw, however, do not come into very close touch with industrial conditions in Canada.

Should be Research Laboratories

It is evident that some actual facilities should be created which would enable industries to take their scientific problems to men trained in research work, and with a properly equipped laboratory in which to carry out their investigations. At least a year ago, with comparatively little effort, a substantial sum was promised annually for a period of five years by different trade groups, towards the maintenance of such a laboratory, provided the Advisory Council established the laboratory within two years from the time the promises were made.

It would seem desirable, too, if the Advisory Council is to have direct control of the laboratory, that one or more men conversant with actual industrial problems in lines other than those already represented in the Council, be added to its members. Or, if it is found desirable to create a subordinate organization to control the activities of the laboratory, the question of placing on its governing board men with the qualifications mentioned above will deserve great consideration.

It has been estimated that after the war the total of the Canadian debts, federal, provincial and municipal, will exceed five billion dollars—five times the staggering amount imposed on France by Bismarck after the Franco-Prussian war. The amount to be paid by us is, therefore, thirty-five times per capita the amount which the Germans thought would bleed France white. To enable us to pay the interest on this immense debt, such instances as above mentioned of the application of science to industry, must be multiplied, production must be increased and waste eliminated. Will Canada wake up before it is too late? Will the neglect of science continue, and the forces of obscurantism prevail?

When we begin to feel keenly (as soon we surely shall) the pressure of the burden of our public debts for war and other purposes, there will be a sharp awakening, and Canadians will shake off the prevailing apathy in regard to the application of science to industry. When we develop our enormous resources scientifically, we shall enter upon a new era of progress and prosperity.

A Resolution passed by the Toronto Branch Annual Meeting on the 16th ult., urging the Dominion Government to definite action, has been transmitted and its endorsement by the Convention is invited.

Vocational Training of Returned Soldiers

The Dominion Government on June 30th, 1915, created a civilian Commission, with Senator the Honorable Sir James Loughheed, P.C., K.C., as president, to care for the returned men and to carry on vocational training, especially of those who, because of their disability, could not follow their previous occupations, and to deal with employment. Soon afterwards, Commissions were appointed in each province, charged with the duty of bringing returned soldiers into contact with employers. Some of the numerous Orders-in-Council, dealing

with phases of the Commissions' activity will be historic, notably that providing funds for the maintenance of men and their families, while undergoing re-education after discharge. Over seventy institutions are now conducted at points from Sydney, C.B., to Sidney, B.C., and others are in course of construction.

As the result of a conference between Mr. W. E. Segsworth, Administrator of the Military Hospitals Commission Vocational Training Branch and the Executive Council of the Canadian Manufacturers Association, a committee was appointed to co-operate with the Military Hospitals Commission, by arranging to allow disabled soldiers to enter suitable industrial plants on a sort of apprenticeship basis.

It is in the interest both of the returned soldiers and those who will subsequently employ them, that the men compelled by their disabilities to enter upon new vocations shall be competent, and experienced in the conditions which will surround them at their work. The Canadian Manufacturers Association's committee may also assist the Commission by recommending courses of training which will lead to industries where employment is sure.

Industrial Housing

The working-class housing conditions in the industrial sections of Canadian cities were far from satisfactory before the war, but in the last three years they have been growing steadily worse. When our soldiers return in large numbers this condition will be further complicated. Private enterprise, for obvious reasons, has ceased to operate in building houses to any large extent. Want of an adequate supply of new houses drives a growing population more and more into available dwellings which are unsuitable for habitation, causes overcrowding, and greatly increases the contribution which the worker has to pay for shelter.

If the population of the country were to continue to spread evenly, and if the migration from the country to the city were to cease, the failure of private enterprise might not be a serious matter, for some time at least. But as we create new industries, and cause the expansion of some old industries for war purposes in certain restricted areas, and attract large quantities of labor to these areas, we develop a serious condition of drift of population which creates serious housing problems. We may have as many houses as before, but not in the right places where the drift has gone.

No Provision Being Made

Government factories have been erected in Canada, and no provision made to house the workers, and large war orders have resulted in private corporations greatly increasing the population of certain districts but making no attempt to shelter that population in decent homes. Bad sanitary conditions and overcrowding have grown up as a result.

The British Government, through the Imperial Munitions Board, has erected and financed munition plants to an extent of over \$14,000,000 in Canada, employing 6,200 workers. This is in addition to the munition work being done by the Canadian Government and by private corporations. The Prime Minister is reported as saying that the above Board has spent \$64,500,000 in shipbuilding and that the Canadian Government has appropriated \$25,000,000 for the same purpose. In some centres overcrowding and overrenting has been caused by other forms of war activity carried on by Government agencies.

No housing policy has been determined in connection with any of the above enterprises. While the Imperial Munitions Board is representative of the British Ministry of Munitions, it has apparently no power to do in Canada what the Ministry regard it as essential to do in Britain to secure efficiency in

production. The housing and social welfare branches of the Ministry are huge organizations, and are looked upon as important parts of the machinery of war; but above all they are being used to lay the foundations for industrial reconstruction after the war. Are we in Canada going to suffer material loss as a result of neglect of this aspect of war industry, or are the British people wasting their money and time?

These are matters for the Governments of Canada to consider. In Great Britain it has long been recognized that the government of a country has a distinct responsibility in regard to the housing conditions of the people, apart from those engaged in war industries. Before the war many millions of Government money were invested in housing schemes, promoted either by municipalities or by public utility societies. These schemes were carried out to meet needs no greater than those which have had to be met in Canada.

Great Britain's Example

Whatever answer may be made to the above question regarding what should be the Government housing policy in Canada, it cannot be met by the answer that conditions are materially different from those in Great Britain. The war has produced a similarity of problems and conditions, although from experience in dealing with housing problems in the past, the matter is approached from a different point of view in Britain than on this continent. In the United States and Canada, the tendency has been to leave these matters to private enterprise—with fairly satisfactory results outside of the crowded parts of big cities.

But the war, and Britain's example, have brought about a complete change of policy on the part of the United States Government.

The work of Britain in this matter, considering its proximity to the battlefields of France and its reliance on naval protection for its food supplies and its very existence, has been truly remarkable. We have heard little of it in Canada, but it is widely known and appreciated in the United States.

Comparatively early in the war it was realized in Great Britain that the war had to be fought by the civil forces at home as well as by the men standing in the trenches, and that a necessary part of the equipment of the civil forces would be good housing accommodation. The necessities of war and of strengthening the national structure so as to enable it to withstand the consequences of war have created a new outlook on such social questions as housing and town planning.

In answer to a deputation representing the Toronto Branch and other interests which interviewed Premier Sir William Hearst at Toronto on 28th ult., he suggested forming a Housing Branch of the Ontario Resources Committee, so that in Ontario at least definite action seems assured.

Presentation to Mr. Booth

Carrying out the instructions of last Annual General Meeting, Mr. George Booth, in the presence of the Executive Council, on the 26th of February last, was presented with the miniature portraits, both in ivory, of himself and Mrs. Booth. The President, in making the presentation, referred to the long and valued services which Mr. Booth had rendered the Association, and spoke feelingly about the manner in which he had endeared himself to all. As a life-long friend of Mr. Booth, Mr. J. F. Ellis added his testimony, after which Mr. Booth acknowledged the gifts and referred to the many friendships he had formed during his twenty-five years of service for the Association.

All of which is respectfully submitted.

S. R. PARSONS,
Chairman.

H. MACDONALD,
Assistant Secretary.

At the conclusion of the reading of the report it was moved by Mr. Champ (Hamilton), seconded by Mr. Waddie (Hamilton), that the same be adopted.

DISCUSSION OF REPORT

THE PRESIDENT: "Before we take up the discussion of this report proper I would like to refer to one item in the report in connection with our General Secretary, Mr. Murray. There has been perhaps a little bit of misunderstanding in regard to Mr. Murray's relationship with the Association, temporarily at least. Let me say, a number of months ago the Union Government asked Mr. Murray if he would be good enough to give them his services for a few months, at all events three or four months or whatever time might be required, in order to set in motion the Registration Act and to do all the things that are necessary to be done in order to the facilitation of that Act. Now we all recognize that in the General Secretary of our Association we have a magnificent organizer, a man who is thoroughly capable of working out schemes and plans of very great advantage; he has the faculty of seeing things right clear through to the end, and therefore it is not to be wondered at that Sir Robert Borden and the members of his Cabinet, realizing Mr. Murray's ability in that direction, asked the Association if they would not allow him to take up this very important piece of work in connection with the Dominion Government's legislation, the Registration Act.

General Secretary Helps Government

"The Executive Committee, to whom the matter was referred, at once said to Mr. Murray, we feel that you ought to do your very utmost for the Government in this particular matter, for the Government and the country. It was realized that if the Association were to do without the services of Mr. Murray for a few months it would mean more or less loss and disorganization of the Association work, but, gentlemen, it is not the first time that we have been disorganized; we have had three men of our staff overseas, and all that led to a certain amount of disorganization, and we felt that we, in common with other institutions and organizations, should take our full share of any work we were called upon to do at this particular time. Therefore the Executive Committee said to Mr. Murray, no matter what it may mean in the way of disorganization of our Association's plans, you ought to give freely your services to the Government; and further we said, the Government is not to be at any expense; we gladly furnish you to the Government for their purposes without any expense to the Government, except such items as incidental out-of-pocket expenses which would come up in connection with Mr. Murray's office. This we felt was not only the wise and proper thing to do; it was the right thing to do, in showing the appreciation of the Association that the Government had recognized Mr. Murray's ability and his importance to their work in asking him to deal with this matter. And in the next place we felt that it would place the Association and Mr. Murray in an independent position, and if Mr. Murray felt that the plans which were being brought forward—plans as they were being promulgated at that time—were not going to be such as would commend themselves to him and the members of the Executive Committee with whom he would naturally confer in the matter—if these plans were not, in his opinion and the opinion of his advisors, going to be ample to do the work which the Government designed, then Mr. Murray would be quite in an independent position to do as he deemed wise and fitting in the premises. He could leave at any time if he wished to do so.

"Now, what has been the history of the matter? Mr. Murray, I may say, was not altogether sure just at first

whether the plans which are being brought forward would be ample and would do just what they were designed to do. However, I will say this, that as time went on and he consulted the various ministers in regard to all the plans and schedules and forms, and the ways and means of working in one way and another in connection with the registration, Mr. Murray was seized with the great importance of what could be done and of what the Government were determined to do in this matter, and therefore whole-heartedly he gave himself to this work.

"Now, it will mean, perhaps in the course of another month or so at the outside, that Mr. Murray will be free again and will devote his entire time to the services of this Association. I am sorry Mr. Murray is not here to hear this. He will be with us this afternoon, but the matter naturally comes up in connection with this report. I want to say that I feel sure I am voicing your own views when I say that we are delighted that the Government chose Mr. Murray for this important matter; we are pleased Mr. Murray has given himself so freely to the work, and we are very glad indeed to hear from Mr. Murray that he believes the results will be so effective that the plans of the Government will be more than realized.

"I wish also in this connection to pay a tribute to Mr. Macdonald, our Toronto secretary. In the absence of Mr. Murray he has done most remarkable work, and he has thrown himself into all our work in such a manner that he deserves our thanks—not only our thanks but our highest appreciation; and what is true of Mr. Macdonald is true of every members as it has been in the last year or two. Never have manner, but I am sure that you will agree with me in the statement that never in the organization of the Canadian Manufacturers Association has it been of such use to its members as it has been in the last year or two. Never have the members consulted the Association to such an extent; their problems have been so serious, so diverse, so peculiar, as to require the particular services which could be rendered by one department and another; and what I have said of Mr. Macdonald has been true of the Transportation Department, the Tariff Department, the Legal Department, and other departments of the Association, and it is a great satisfaction to me at the close of my term to be able to thus pay tribute to the work of our Association and to those who have been engaged in it."

The Fuel Situation Is Discussed

The report of the Executive Committee having been declared open for discussion, Mr. Waddie, of Hamilton, as seconder of the motion to adopt the report, introduced the fuel question, stating that he thought some reference should have been made to it.

MR. WADDIE: "As seconder of the adoption of the report, perhaps it is a little out of place on my part to make any criticisms. I don't want to make any, but I think that some reference should have been made to the fuel question. In the fuel situation we are suffering in Hamilton very seriously, and I think that the Canadian Manufacturers Association can do a great deal to relieve this situation, if they will vote on it in a scientific way. Now we hear a good deal of reference made to peat and to lignite, and I just want to say one word in that connection, because I happen to have had connection with a lignite proposition a good many years ago, I think twenty years ago, and it was in Bohemia. I happened to be assistant manager of a plant in Bohemia, in the north of Austria, where we had a lignite plant. That is, we dug lignite out of the side of the hill and brought it down and we found this lignite, which we have vast beds of in Canada, was wonderful for the purpose of making producer gas. It is a large plant, it is a plant that is working against us now in foreign countries and working against us hard. This plant is run entirely by natural gas which is produced from lignite. All their heating and everything was done by producer gas produced from lignite. I may say it is a large steel plant.

Develop Natural Resources

"This lignite appeared to me to be exactly the same as we have in Canada. We talk about \$50,000 a year salary for our manager. Why can't this Association employ an expert to investigate this fuel situation, the peat and lignite end of it, and see if we cannot find fuel for our manufacturers? I think that is a point or matter that the Manufacturers Association could take up. I don't know who is in charge of the Resources Committee, it has not been sufficiently published, but there is no doubt that Canada, if it is going to develop, and we hope and know it will develop as a manufacturing centre, must not entirely depend upon electrical power, but it ought to try and develop its natural resources, and in

doing so I feel sure the question of natural fuel such as peat should be looked into.

"I am a Scotchman, I know how to cut peat and have cut it. It can be procured. There is also the lignite. On this question of lignite we can do great things. I just wanted to mention that point, that in our report we might have put something in about the fuel situation, because it is getting to be very serious. No doubt our President was a little shy in talking about fuel, because fuel oil is up (laughter). I am sorry the question of fuel was not mentioned."

The Lignite Supply

MR. HOBSON (Hamilton): "In reply to Mr. Waddie's remarks I may say when Dr. McCallum is here to-morrow he will probably go extensively into the matter of what has been done in connection with lignite. An experimental plant is now in course of erection, financed by the Dominion Government and the Governments of Manitoba and Alberta. That plant will be producing lignite briquettes in the course of a few months, and if it is a success, which we hope it will be, Mr. Waddie will have his answer."

MR. MCINTYRE (Toronto): "Mr. President, it strikes me that to get greater use of the lignite supplies in Canada there is one situation that should be for the moment considered, and that is that three and a half million tons of American coal have been going into the Western provinces each year—Pennsylvania coal. The point is why cannot a large portion of that coal be diverted from the western to the eastern provinces and thus encourage the development of the western coal? From what little experience I have, I happen to be slightly interested, I should say frankly that the spending of great sums of money in briquetting lignite coal is probably not the wisest move or the wisest line to work on. Encourage the greater development of that coal for the western provinces so that they may take care of their own requirements. With the enormous quantity of coal they have, why put money into manufacturing machinery for the handling of that coal, with the high cost of briquetting, when seventy-five per cent. of the lignite coal will store for any reasonable time? And that I believe is the object in briquetting it, so that it may be transported. If an arrangement can be made,

I am satisfied the American people will relinquish the western market to some extent and bring that coal to the East. We do know, we have to admit, that transportation is a big item to be considered because of the effect it has on the railway earnings derived from taking the American coal to the West and having the load back. That it seems to me has sooner or later to be rectified.

"Now, sir, if any move can be made along that line, I say it is folly to have to spend money to carry that coal at the present cost, estimated at \$7 a ton, when coal can be mined and supplied in that country for just one-third of that sum. The only advantage is in transporting and storing."

What Special Committee has Done

MR. SHAPLEY: "As one of the special committee to look into this matter some months ago, I would like to say Mr. Waddie has certainly referred to a very important matter. The matter of peat, I think, perhaps, is one that concerns the people of the Province of Ontario and also the Province of Quebec to a much larger extent than it does the other provinces.

"Now, the Committee have been following this matter up very closely. We have had a number of meetings with the experts from Ottawa, from the Mines Department down there, who, I think, know more about the peat fuel situation than any person else in the Dominion at the present time. We have also had meetings with the Mines Department of Ontario and we have had expert advice from different sources, and the outcome is that at the present time the Dominion Government are working with the Ontario Government. The Ontario Government have set aside \$100,000 to use for experimental purposes, and I think the Dominion Government will spend fully the same amount, and the two departments are now

working together with expert engineers who are giving this matter a great deal of consideration at the present time, and they are making experiments, and we expect by the fall they will be in a position to report to us just what can be done with the large bodies of peat we have in this country.

"There is no question in my mind at all that we have very valuable resources in our peat bogs. I have followed the matter for several years, and I am satisfied in my own mind that all that it is necessary for us to do is to find a way of preparing the peat. It is done in other countries. Mr. Waddie has told you what has been done in Austria. In Germany, I understand, they have large plants, and they are using peat for making gas and for other purposes. It is a very valuable article, and we should certainly take steps in this country to use it to a much greater extent. My opinion is that, before long, we will have information from this body of engineers that are now working on it, so that it will be a simple matter for us to establish plants in different parts of both Quebec and Ontario, and we will be able to add very considerably to our fuel supply.

"Now in regard to the coal situation, we have had one or two conferences with the Fuel Controller. He came up and met with our Committee, and we talked the matter over very carefully, and as far as we can see we are being dealt with very liberally by the people of the United States, and I don't know that there is anything more we can do at the present time but get as great a supply of wood as possible. The situation, of course, at the present time is very uncertain. We don't know what will happen to us; if we have such a severe winter as we had last winter we are very likely to be short of fuel, and the Fuel Controller advises us to lay in as much wood as we possibly can. If the situation is as severe as it was last year we will probably need it."

Industrial Research and Other Matters Introduced

Following the debate on the fuel situation, the President called for further discussion, and Mr. Thomas Roden rose to introduce several other matters.

MR. RODEN (Toronto): "Mr. Chairman, I first wanted to thank the Executive Committee for the very fine report which they have presented, and to state that many of these points will be made a matter of resolution to be introduced later. One of those points is the question of industrial research, and we are desirous that when this resolution comes up we will be prepared to appoint a very strong committee from the general Association to handle this very exhaustive matter. As pointed out by Mr. Waddie, we have one problem in the lignite question which was answered by Mr. Hobson, who said that the Council of Industrial and Scientific Research are handling this particular question. We will have numbers of questions all over Canada which will want to be drawn to the attention of the Council of Industrial and Scientific Research, and it is only by appointing a strong committee that we can make progress in this way. The resolution we are presenting to-morrow will be a very definite one. We want our members to be absolutely alive to the importance of this subject. A year ago this matter was brought up; a year has expired and nothing practically has been done. If we want the Government to feel we are serious in this matter we have got to show some progress and some action.

"I desire before this matter comes up that the members will think about it and talk it over in the interim, and be seized with the necessity of appointing good members in their locality, so that progress can be made.

"In conversation with Professor McCallum the other day, I pointed out to him that the Government had appointed the

Advisory Council (he is appointed chairman of that Council), and we all believe they are looking for relief in connection with the unfortunate conditions in Canada, and that the business men of Canada are looking to Professor McCallum for guidance and help, and I believe on him is the responsibility of dictating what progress shall be made; but he is also human, he wants to have encouragement from the industries and to know how serious they are in their requests. It is up to you to emphasize to Professor McCallum to-day just how important this is to you. The coal problem is only one of a hundred entering into this country, and when the enemy are making such tremendous progress we must not be inactive; we have got to take action, we have got to get Professor McCallum to impress upon the Government the importance of the question.

The Housing Problem

"The question of housing is another very big question that is coming before our meeting to-morrow in the form of a resolution, and it is one that requires the serious consideration of our members. Canada is growing very rapidly and, with the tremendous changes that have taken place, housing conditions are getting to be very serious. Localities are changing and others are building up, and with the high cost of labor and materials it is almost impossible to get private money invested in the building of houses. In Great Britain they have become seized of the importance of it, and the Government and the municipalities have got together to provide better housing conditions. It is up to us to realize our responsibility to our workmen; it is up to us to realize

our responsibilities to our industries to make them successful. They can all be made successful by having proper living conditions.

"Great Britain is spending over \$300,000,000 in improving housing conditions in Great Britain. What have we done in Canada? That is the question here. We want our members to be seized of the importance of this matter. In Toronto we have over four thousand houses that have been condemned, and yet have been reinhabited, and similar conditions exist in other parts of Canada. That is a condition that we should not allow to exist. It was that condition that brought about the downfall of Russia, the indifference of the guiding classes to these conditions.

Improving Vocational Training

"On the question of vocational training, I don't know just how far our Association is going, but in an editorial in the *Mail* last evening a very good hint was given as to how we could co-operate and attend to the vocational training of the industrial classes. There is one way of helping them which has just been made known in connection with the vocational training of soldiers who have been incapacitated for their previous businesses, by taking up another form of training for other lines. This line would be a splendid thing for us to follow, not only for ourselves, but for the whole country. In this way we are relieving the country of a great burden, and making ourselves all self respecting and acquitting ourselves as citizens and Christians. I trust in this particular instance, Mr. Chairman, we will talk that matter over seriously."

MR. HARRIS (Toronto): "We refer, with a good deal of pride, to the fact that the British Government, through the Imperial Munitions Board, has established Government plants, and that there has been expended a great deal of money. This is all right, Mr. Chairman, but these firms, not having to face liability as privately-owned firms, have gone into the labor market, and have offered wages altogether out of reason, and they have disturbed very much the conditions in privately-owned plants and have created discontent, and have not attempted to supply a remedy. In getting on my feet I do so with this object, that I think the Executive of our Association should get in touch with the managers or those who have to do with the management of these organizations, such as Aeroplanes, Limited, and the British Forgings and British Ship Building, and see if they cannot be in some measure brought to see that by disturbing the conditions generally they are increasing the cost of living and disturbing business."

Must Not Interfere

THE PRESIDENT: "I am sure this matter will receive the attention of the Executive, but you know, gentlemen, how difficult it is to do that which might be done and would be done in other times."

MR. J. P. MURRAY: "All the more necessary."

THE PRESIDENT: "Yes, but the Association will agree with me that it could not put itself on record as doing anything which would block the path of those who are directly engaged and responsible for the making of munitions in this country. Much as we feel that the interference caused in our different organizations and industries is very difficult for us to meet, yet you will see it is fraught with difficulty, and I am quite sure you will be satisfied to have the Executive Committee give consideration to this matter."

N.B. Lumbermen Organize

An Association Was Formed Last Month in St. John and a Permanent Secretary Will Likely be Appointed

Representative lumbermen of the province of New Brunswick have formed the New Brunswick Lumbermen's Association. The movement toward the formation of such an organization has been on foot for some time but it was not until June that the first official steps were taken in the matter.

W. B. Snowball, of Chatham, presided at the organization meeting in St. John, and at the outset explained fully the purpose sought to be attained. It was pointed out that if such an association were formed it would tend to cement the lumber interests of the province, and "cut out the cross grains," as one speaker expressed it. It would make closer co-operation with the crown lands department and legislature possible; the prevention of forest fires could be made more absolute and legislation affecting the lumber interests of the province could be watched more carefully and treated more thoroughly.

An organization committee, constituted as follows, has been working on the scheme for some time. W. B. Snowball, of Chatham; F. C. Beatteay, of St. John; Donald Fraser, of Plaster Rock; Daniel Richards of Campbellton, and R. W. McLellan, of Fredericton. It was pointed out that New Brunswick was the only province in Canada where lumbering was extensively carried on without a lumbermen's association of some kind, and while there had been at one time a Limit Holders' Association, this had not fulfilled its functions as was expected and was finally disbanded.

The new association will include in its membership all those directly interested in the lumbering industry who desire to become identified with it. The meeting felt that a secretary should be found who would be paid in the vicinity of \$4,000 per year. This man should be one highly qualified for the position, an expert forester and one who would be qualified not only to give technical advice to the members of the association, but as well, keep in touch with all proposed legislation affecting the lumber industry introduced in the legislature.

Lumbermen present who were identified with the association as it exists in the province of Quebec cited instances where the lumber industry of that province had been saved much difficulty and its interests protected by the association there.

Many of the larger lumber interests of the province employ expert foresters and it was thought by those present that these men by their knowledge of the forest limits of the province might assist materially, if linked together in an association, in the prevention of disastrous forest fires.

It was suggested that a membership fee of \$10 be fixed upon and an additional fee of \$10 per million feet of lumber cut or ten cents per mile. This matter was, however, not finally settled upon. On motion it was decided to form an association to be known as the New Brunswick Lumbermen's Association. Mr. McLellan presented to the meeting a draft of a proposed constitution but this was not discussed in detail. It was decided on motion to hold the next meeting of the association at Fredericton on August 1, at which details of the formation and operation of the organization would be decided upon and officers elected for the ensuing year. It was pointed out that about this date all the lumbermen in the province would visit the capital in order to pay their stumpage dues and it was therefore an opportune time to get the lumbermen together.

The association aims to keep its members in close touch with the market situation so that the smaller operator will benefit by the experience of the larger concerns with a view to complete co-operation in the industry.

Association's Work Comes Under Review

Three Ways by Which the Progress of the Association Can Be Measured—How the Organization is Becoming Increasingly National in Extent—Work Lying Before the Association Outlined

By G. M. MURRAY

General Secretary, Canadian Manufacturers Association

OWING to the absence of the General Secretary, Mr. G. M. Murray, from the offices of the Association, in connection with his duties as Secretary of the Registration Board, no formal report was presented by him at the Montreal Convention. At the third business session, however, Mr. Murray was present and delivered an informal address on the work of the Association during the year. After apologizing for the fact that his duties at Ottawa prevented him from preparing the usual report, he said:

"There are at least three ways by which the progress of the Association can be measured and its success can be judged; one of those is by its financial statement, and I am sure you will all agree with me that, remembering the fact that we last year in Winnipeg had to report a deficit, it is particularly gratifying this year to know we have a substantial surplus to our credit. It is also particularly gratifying, notwithstanding the fact that we have increased our membership fees very substantially, that we are still able to report an increase in our numerical strength. Nothing in the past year has given me more pleasure than to observe the readiness with which our appeal for more money has been met. The increase in the membership fee was a very substantial one, the minimum I think was at least 50 per cent. and in some cases as high as 100 per cent., and it was no little satisfaction to me, I can

assure you, to have our bill for fees sent back in a number of cases, saying we had not charged enough. I have one firm in mind particularly whose fee last year was \$35 and this year \$75. They sent it back and said if I had billed them for \$150 they would gladly have paid it. That, gentlemen is typical of the spirit that permeates the Association to-day. I wish to assure you it is a genuine pleasure for the members of your staff to work for such an organization.

"The third means by which the progress of your Association can be measured is through the results which it has accomplished. Upon that I feel I need say very little because that is fully covered in the reports before you. But it is significant that in war-time the call of the annual meeting of the

Association should be as generously met as has been the call to this year's annual meeting. I have stood on the platform in this room at previous annual meetings when there were no more than a corporal's guard here to start proceedings, and when there were never more than fifty at any one session. I am told that this afternoon every seat in the hall was occupied and even standing room was at a premium.

That again is typical of the spirit which actuates the Association, and so long as we have indications of that kind to guide us in determining whether or not our work is appreciated, whether or not the Association is a success, I think we need not hesitate for one moment for our answer."

Mr. Murray then referred to the war service record of the staff of the Association, stating that six members had been called upon for overseas service. He next pointed out that during the past year the Association had fulfilled, as never before, its aspirations to become a national organization.

"It is true," said Mr. Murray, "that we always claimed to be a national organization, but we were never organized as we should have been in the outlying districts. Shortly before the last annual meeting we took one of the first steps in that direction by opening a permanent office for the Maritime Provinces. Since then we have opened an office in Vancouver and have a competent secretary in charge

who is looking after our interests on the Pacific coast. To-day we have offices in Amherst, Montreal, Toronto, Winnipeg and Vancouver, all with permanently employed staffs in charge. We have further offices where men are giving part of their time, in Quebec City and Hamilton.

"I want to make one constructive suggestion here tonight," continued Mr. Murray, "possibly I should make it to the Executive Committee, but I am quite sure the Executive Committee will appreciate the sentiment of the annual meeting upon this point, that is, that the time has now arrived when I think we should round out our national organization by having constantly upon the ground at the capital city of Canada, at Ottawa, a man who will adequately look after the



—B. and C. Press Photo

Gilbert M. Murray

General Secretary, Canadian Manufacturers Association

interests of the Association and the interests of the individual members thereof. My three months' stay in Ottawa has convinced me, as nothing else has done, of the need for a man constantly on the ground, particularly in times like the present when legislation is changing, from day to day almost, by Order-in-Council, when special war machinery is being set up and embargoes and restrictions and regulations of one kind and another are being sprung upon the public. It is of the utmost importance there should be some one around to keep in touch with the changing conditions and keep in touch with the various problems they have to take up at Ottawa."

The Work that Lies Ahead

Taking a survey of the work lying ahead of the Association, the general secretary pointed out that it was now approaching a critical time when it behooved manufacturers to be more than ever on the alert for the protection of the interests of the manufacturing industries of Canada.

"The policy of protection is being unmercifully assailed," he declared. "At the same time, in order to enable the Government to meet our war indebtedness, the taxation upon industry is being increased. On the one hand the manufacturer is confronted with the loss of the protection without which he cannot exist, and on the other hand while he is content to pay whatever tax may be necessary he is confronted with the possibility that the rewards of his labor may all be taken from him. The situation is one which is going to call for very careful study, for exhaustive research with the compilation of statistics upon the basis of which these very complex problems can be intelligently solved. I am sure we would all be very sorry indeed to see this issue of protection versus free trade, or the issue of taxation settled in the heat of passion without proper consideration of the fundamental principles that should govern such questions."

"Another thing to which we will have to give attention," continued Mr. Murray, "is one of the lessons that has been forced upon us as a result of the war, and that is the necessity of rendering ourselves independent as far as possible of outside countries for the raw material necessary to our industrial operations. Canada's failure adequately to protect the iron industry of this country has left us to-day at the mercy of the United States, and the industries which use iron as their basic material are suffering in consequence. On the other hand there is a cognate problem that is equally deserving of attention and that is the problem of advancing to the highest state the manufacture of our raw material before we allow it to be exported from this country. The people who have invested their money in the paper industry to-day are a very great asset to this country, and I am only sorry that their enterprise has not received at the hands of the Government the recognition which it deserves. There was a time when our papers from one end of Canada to the other were urging the Government to allow the farmers to sell their wheat in the most profitable market, but I find as soon as the boot is on the other leg and that our paper manufacturers want to sell their paper in the most profitable market, the newspaper publishers have an entirely different story to tell. I say I am sorry that the people engaged in that industry have not received the consideration they deserve. But there are other materials which we should endeavor to advance in the manufacture of before we allow them to be exported. I need not enumerate them beyond the mention of nickel. If all our materials were dealt with in that way I believe that Canada would experience an industrial revolution that would insure her prosperity for a generation to come.

"Another problem that has loomed in the future is what is to become of our export trade when the war is over. We all know on the termination of the war Canada must lose the export trade in war materials and in munitions, which bulk so largely in our trade returns to-day. What is going to take the place of it? That is a very serious problem. I am sure none of us are pessimistic enough to believe that there will not be other business arise to take the place of it, because we realize that not only have the devastated areas to be rebuilt but that manufactured goods for the support of the populations that have become exhausted the world over have got to be replenished. Remembering only those two things, it is as certain as that the sun will rise to-morrow that a large export business will be forthcoming, provided of course, there is the money to pay for it; and that brings up another question: are the nations that will require this material so impoverished they will not be able to pay for it? That is hardly to be conceived, but they will have to establish credits. What is Canada doing to assist in the establishing of those credits? What has Canada to do to help finance her own export problem when the war is over? It is a serious question that you gentlemen ought to consider and you ought to be making preparations now to solve.

"Before the war had run its first year the Association was instrumental in forming an export association, which has been hampered by the fact that there was no ocean tonnage available to transport our manufactured goods across the Atlantic. Despite that fact, with the connections which it has enjoyed with Australia and New Zealand, it has been able to more than pay the expenses of its operations. The trouble with the Export Association is it is trying to do business on too small a scale, too small a capital. It is capitalized and has an authorized capital I believe of \$500,000 and a paid up capital of \$100,000. For a job such as we are contemplating we ought to have an export association in Canada capitalized at \$50,000,000 if at a cent. I believe there has been one formed in the United States to look after the interests of that country that is capitalized at \$500,000,000.

Relations of Capital and Labor

"I am pleased to know that in his address this afternoon our president touched upon the necessity of greater thought, greater study being given to the relations between capital and labor, because I am convinced, gentlemen, one of the new lines of endeavor in which our Association must interest itself is the work of bringing about a better understanding between employers and employees. The war is responsible for many things that perhaps none of us would have thought possible before the war began. Wages are reaching an unheard of level. We all know that when the war is over and conditions get back to normal that wages have got to drop, but we all know, too, that the lowering of wages is something that is always attended by serious trouble. I am not saying wages are too high; I am not saying I would not like to see the workmen of Canada continue to receive the wages they are receiving now, but I do feel that apart altogether from the question of wages there is a great deal that can be done and should be done by the Canadian Manufacturers' Association to make the lot of the working men of Canada a more happy one. I am not going to elaborate my ideas upon that subject but I simply throw it out as one of those things that should engage our attention, and upon that point I believe that our energies could not be devoted in a more practical direction than by endeavoring to see that the workman of this country is provided with an opportunity to better his conditions by means of technical education and industrial training.

AUDITOR'S REPORT

Toronto, May 18th, 1918.

The President and Members,
Canadian Manufacturers' Association, Inc.,
Toronto.

Gentlemen:

We have audited the Books and Accounts of the Association for the year ending 30th April, 1918, and attached hereto please find Balance Sheet, Revenue Account, etc., duly certified to by us. We have also verified the Cash and Bank Balances and the Investments, as shown in Schedule C.

Yours faithfully,

WILTON C. EDDIS & SONS.

BALANCE SHEET, 30TH APRIL, 1918

30th April, 1917. 30th April, 1918.

LIABILITIES.

\$3,430 09	Accounts payable	\$3,148 21
23,296 23	Fees paid in advance	\$31,699 53
652 66	Buyers' Guide and subscriptions INDUSTRIAL CANADA, paid in advance	689 42
<hr/>		
\$27,378 98		32,388 95
44,633 34	Surplus—	
	30th April, 1917. By Balance	\$44,633 34
	30th April, 1918. By Surplus for year	2,097 47
		<hr/>
		46,730 81
<hr/>		
\$72,012 32		\$82,267 97

ASSETS.

\$10,783 84	Cash on hand and in bank, Schedule C	\$13,393 42
48,560 03	Investments, Schedule C....	53,632 59
803 93	Interest accrued on above...	1,172 24
<hr/>		
\$60,147 80		\$68,198 25
	Accounts receivable	\$9,830 48
	Less reserve for bad debts. 1,000 00	
		<hr/>
7,712 61		\$8,830 48
265 01	Members' fees accrued and due	476 24
		<hr/>
		9,306 72
3,886 90	Furniture and fittings	4,763 00
<hr/>		
\$72,012 32		\$82,267 97

Audited and found correct.

WILTON C. EDDIS & SONS,
Chartered Accountants.

REVENUE ACCOUNT.

For Year Ending 30th April, 1918.

1918.

April 30th.

To Expense—Schedule A	\$72,651 73
“ Depreciation, furniture	500 00
“ Companies' test cases	1,019 09
“ Ontario insurance investigation	1,135 60
“ Workmen's Compensation Act	1,659 66
“ Trade Index, 1916	252 86
“ Export Association contribution re organization expenses	553 17
By Membership fees	\$70,227 10
“ Interest	2,803 97
“ INDUSTRIAL CANADA, Schedule B	6,838 51
<hr/>	
	\$77,772 11
To Surplus carried to Balance Sheet....	2,097 47
<hr/>	
	\$79,869 58

SCHEDULE A.

EXPENSE ACCOUNT.

For Year Ending 30th April, 1918.

Annual Meeting, 1917	\$1,403 31
Branches—	
British Columbia	\$2,247 95
Hamilton	633 03
Maritime Provinces	3,036 29
Montreal	5,508 00
Prairie Provinces	8,153 67
Quebec	552 90
Toronto	2,234 57
<hr/>	
	22,366 41
Certificates	340 48
General counsel fees	2,400 00
Departments—	
Commercial Intelligence	3,510 13
Tariff	8,354 96
Transportation	14,210 37
*Insurance	1,570 56
Exchange	72 97
Postage	1,179 55
Printing and stationery	1,463 55
Rent and light	1,472 04
Salaries	13,008 44
Sundries	1,226 39
Telegraph and telephone	258 91
Translations	17 09
Travelling	830 75
<hr/>	
	\$73,651 73
Less credit from Wool Commission	1,000 00
<hr/>	
	\$72,651 73

* This item charged to Expense here may be eventually collected from Willis, Faber & Co., when the affairs of the Central Canada Insurance Department are wound up.

SCHEDULE B.

INDUSTRIAL CANADA.

Statement Showing Income and Expenditure for Year
Ending 30th April, 1918.

INCOME.

Advertising—Display	\$35,240 24
Advertising—Buyers' Guide	1,315 70
Sale of copies	173 49
	<hr/>
	\$36,729 43

EXPENDITURE.

Electros	\$546 95
Special literary matter	516 50
Postage and distribution	1,545 33
Printing and stationery	16,309 81
Rent and light	1,100 04
Salaries	9,092 21
Telegraph and telephone	63 96
Travelling	230 96
INDUSTRIAL CANADA Prizes	220 00
Sundries	105 16
	<hr/>

\$29,730 92

Profit for year 6,998 51

\$36,729 43

By Profit for year brought down \$6,998 51

To Provision for Income Tax 160 00

By Balance carried to Revenue Account \$6,838 51

CASH ON HAND AND IN BANK.

Cash—

Toronto	\$225 00
Montreal	125 00
Winnipeg	200 00
Vancouver	200 00
Cash Account, Stamps, Toronto	49 40
General Bank Account	11,291 66
Contingent Bank Account	1,302 36
	<hr/>
	\$13,393 42

A Fuel Mixture

An interesting fact due to the coal shortage has been brought to the attention of the Federal Fuel Administrator Garfield by field agents reporting from Pennsylvania. The report tells about tests successfully conducted at the plant of the Carpenter Steel Company at Reading, Pa., where a mixture of anthracite culm and bituminous coal was burned. It was proved by this test that it was possible to use 20 per cent. culm mixed with 80 per cent. bituminous and with natural draft to get 100 per cent. of boiler rating and an efficiency of 70 per cent. Under forced draft they were able to use 35 per cent. culm and 65 per cent. bituminous coal, getting 115 per cent. of boiler rating and an efficiency of 75 per cent. It is thought that the experience of this Pennsylvania plant will lead to far-reaching experiments in other parts of the country.



—B. and C. Press Photo

J. F. Ellis

Barber-Ellis, Limited, Toronto

Treasurer, 1918-19. Canadian Manufacturers Association

SCHEDULE C.

INVESTMENTS.

Due Date.		Rate of Interest.	Bought to Yield.	Par Value.	Amortized Value.
1 July, 1944	City of Toronto Bonds	3½%	4.25%	\$4,866 67	\$4,289 63
1 Sept., 1920	City of Hamilton Bonds	4%	4.22%	4,000 00	3,981 02
1 Jan., 1941	City of Stratford Bonds	4½%	4.25%	10,000 00	10,344 21
30 Jan., 1942	Riordon Pulp & Paper	6%	6.1%	5,000 00	4,956 24
1 July, 1948	City of Toronto Bonds	4%	4.75%	6,326 66	5,566 18
1 Oct., 1932	City of Brandon Bonds	5%	5.10%	10,000 00	9,898 25
1 July, 1925	City of Toronto Bonds	4½%	5.4%	5,000 00	4,741 78
1 Dec., 1927	Dominion War Loan	5½%	....	10,000 00	9,855 28
				<hr/>	
				\$55,193 33	\$53,632 59

LEGISLATION

Annual Report of the Legislation Committee

YOUR Legislation Committee has, during the past year, dealt with a variety of subjects, ranging from matters affecting the interests of individual members and particular localities to matters of provincial and Dominion-wide importance.

Company Licensing Cases

Substantial progress has been made toward securing a decision of the vexed question of the rights of the provinces as regards controlling companies incorporated by the Dominion. The case on the Saskatchewan Act was argued in the Supreme Court of Canada last November and judgment was reserved. The argument in the Manitoba case was begun at the same sittings, but was adjourned at the instance of the

cern of your committee to have the cases so framed as to cover as many as possible of the various questions involved, amongst which are the following:—

1. Whether a province can require a Dominion company to take out a company license before carrying on business in the province.
2. Whether a province can interfere with the corporate status or capacity of a Dominion company.
3. Whether a province can bring a Dominion company under the Provincial Companies Act.
4. Whether a province can make for a Dominion company its company law.
5. Whether a province can place a Dominion company in the category of a foreign company and apply to it the same conditions for entry into the province.
6. Whether a province can impose on a Dominion company a tax in the form of a license.
7. Whether a province can enforce a tax against a Dominion company by depriving the company of its civil rights in the province pending the payment of the tax.
8. Whether a province can penalize non-payment of a tax by a Dominion company by outlawing the company.
9. Whether a province can deprive a Dominion company of its right to appear in the Courts.
10. Whether a province can use its power to tax in such a way as to attain an ulterior purpose not within the scope of its powers under the British North America Act.
11. Whether the legislation in question in Saskatchewan, Manitoba and Ontario is really taxation legislation, or whether it is intended for a different purpose.
12. Whether a province can, under the guise of taxation, enact legislation intended to deter incorporators from going to the Dominion for their charters.
13. Whether a province can, in its legislation, discriminate in favor of its own companies and against Dominion companies.
14. Whether a province can concede to its own companies certain powers as incidental to their incorporation and deny those powers to Dominion companies until they take out a license, paying the same fees as if they were being incorporated.
15. Whether a province can tax a company on the basis of its authorized capital without regard to the amount paid up or the amount employed in the province.
16. Whether a province can by departmental regulation or action attain a legislative result which could not be directly enacted by statute.
17. Whether a province can by the combined operation of two or more statutes or the operation of common and statute law, attain a legislative result which could not be attained by a single statute.
18. Whether a province could prevent a Dominion trading company from holding land necessary for its purposes.
19. Whether a Dominion trading company is more dependent upon provincial permission to hold land than is a bank or a railway company.
20. Whether a province can require the registration of a Dominion company for the purpose of establishing its corporate status and right to trade in the province.
21. Whether a province can regulate inter-provincial trade or trade in general by a licensing system.
22. Whether a province can set up trade barriers against other provinces and as against Dominion trading companies.
23. Whether a company, incorporated under the Dominion Companies Act, has merely capacity or whether it has the right or authority to carry on trade throughout Canada.

The statements of these points will show the magnitude and complexity as well as the importance of the issues. It will be seen also that the decision of the cases may have an important bearing on the whole question of the fiscal powers of the provinces. Your association has had to deal with a variety of questions as to the validity and effect of provincial statutes dealing with such subjects as succession duties and



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The Harris Litho Co., Limited, Toronto
Chairman, 1918-1919, Legislation Committee

Provincial Attorney-General, and has not yet been concluded. The case on the Ontario Act was decided by the Provincial Court of Appeal, as anticipated, in favor of the province. No appeal has been taken from this decision because the case covers substantially the same ground as the Manitoba case. The Attorney-General of Ontario, however, realizing the inconclusiveness of the decision in the Ontario case, asked and obtained leave to appear on the argument of the Manitoba case in the Supreme Court. The Province of Ontario has also proposed that the three cases should be combined in an appeal to the Privy Council. Your committee had hoped that a satisfactory decision might be secured from the Supreme Court of Canada, the general principles having been laid down by the Privy Council in the John Deere Plow Company case. There are indications, however, that the Supreme Court itself is reluctant to assume the responsibility of deciding, because of the importance of the issues and the strenuous efforts of the provinces to maintain their position notwithstanding the John Deere decision. It has been the con-

municipal trading licenses, all of which are potentially involved in the company license cases.

Your committee believe and have represented to the Dominion and provincial authorities that the expense of deciding issues of this kind should not be thrown upon private parties, but should be borne by the Government. The Dominion Government had indeed, in the Companies Reference, attempted to get the issues before the court, but, as was pointed out by the Privy Council, the issues were not raised in a convenient form. This association having now raised the questions in a concrete form, your committee are of the opinion that the further conduct of the cases should be provided for at the expense of the different governments interested, and negotiations to this end have been begun by your committee.

Taxation Questions

Mention has been made under the above head of the problem of overlapping taxes. Taxes are proverbially certain, but it is the aim of all civilized governments to secure a certain measure of equity in their incidence. One of the problems with which your committee have been concerned, is the constant effort of provincial governments to secure revenue from extra-provincial sources, not only in the case of company licenses, but also in stock transfer taxes, succession duties, income taxes and other forms of imposts. It is considered good provincial financing to make outsiders pay, partly of course because they can offer no effective resistance. Thus provinces undertake to tax companies not only on the capital employed in the province, but on their total paid-up, or even their authorized capital, regardless of the fact that portions of it may be used outside the province. In taxing the estates of deceased persons, most of the provinces tax not only the whole of the estate of persons dying domiciled in the province, but also the property in the province of persons dying domiciled outside the province. In income taxes, the provinces attempt to tax not only the whole of the income of persons residing in the province, but also the income on property in the province of persons residing outside the province; all of which means double taxation. It is obvious that such a tax incidence is not only unjust but produces untoward results from an economic standpoint. Constitutionally, of course, the provinces are confined to taxation "within the province," and it is arguable that this means persons and property within the province, and that a province has no power to tax either persons or property outside the province. The result of the cases, however, though it is none too definite, seems to be that a province may tax persons in the province on all their property wherever situated and may also tax all property within the province of persons wherever resident. Sooner or later there will have to be some allocation of, or reciprocity in, the exercise of the powers of taxation as amongst the different provinces and perhaps as amongst the different parts of the Empire; for a corresponding difficulty arises as between England and the Dominions. Your committee are hopeful that with the settling of some of the questions in the company cases, more progress may be made in the adjustment of the fiscal powers of the provinces in other branches.

Bankruptcy Legislation

It will be remembered that on various former occasions the association has been on record as supporting the proposal of a Federal bankruptcy system instead of the present method of winding up insolvent estates under provincial statutes. Indeed it may fairly be said that so far as the discussion of the last five years is concerned, the proposal was initiated by the Canadian Manufacturers Association; though, as suggested by your committee in previous reports, it did

not seem to lie directly within the functions of the Canadian Manufacturers Association to undertake an active propaganda in support of the proposal. The matter having been actively taken up during the past year by the Canadian Credit Men's Association, your committee were called upon to consider the terms of a draft bill prepared on behalf of that association and introduced in Parliament. The bill was referred to a committee which spent considerable time upon it, the bill being afterwards laid over with a view to its being taken up at the next session of Parliament. Your committee are reluctant to put anything in the way of constructive effort in the direction of a proper bankruptcy system, but there are features of the bill, as introduced, which have given your committee grave concern, and which render it doubtful whether the bill, in its present form, would make an appreciable improvement on present conditions.

Law books in Canada, and nearly all civilized countries, are strewn with the wrecks of unsuccessful bankruptcy Acts. In Canada the failures were so convincing that for thirty years we have been without an Act, though practically every other civilized country has an Act in operation. Your committee are impressed that the prime requisite of a successful Bankruptcy Act for Canada is that it should be a Federal Act, not merely in the sense that it is passed by the Federal Parliament, but in the sense that it should be administered by the Federal authorities and under Federal control. The bill introduced at the last session provides for the administration of the Act by the provincial courts, and this feature, in the opinion of your committee, is liable to prove a fatal defect. It is true that provision is made for appeal to the Supreme Court of Canada, and for the making of uniform rules by a committee of judges representing different provinces; but your committee are unable to believe that these provisions will provide any adequate control of the administration. It must be remembered that in a bankruptcy system the administration, that is to say the supervision and control of the discharge of bankrupts and the activities and accounts of trustees, are relatively more important than the technical terms of the law governing the system. It is largely a matter of morale and procedure. If the matter is left to the different provincial courts without any effective central control, the result will be variety instead of uniformity of point of view and practice throughout the Dominion.

Your committee believe that it is a requisite of a successful system that it should be under the effective control of some official or board acting under Federal authority. We are not concerned with the form of organization by which this result may be attained, and it may be that the present bill is susceptible of amendment to attain the desired object. There are certain methods, however, which have been applied in Canada to other subjects the analogy of which might be valuable. Examples of these are the Board of Railway Commissioners, the Exemption Tribunal under the Military Service Act and the Exchequer Court of Canada. Without burdening this report with details, it may be said generally that each of these examples presents features which might be advantageously applied in the administration of a bankruptcy act.

There are other factors in connection with this Act which appear to your committee to be also worthy of careful consideration. It appears doubtful whether it will prove satisfactory to provide for the discharge of the bankrupt without an effective centralized check and supervision of the trustee and his accounts. For this purpose it may be necessary to have some official to supervise methods of accountancy and the handling of insolvent estates to the end that no estate

may be finally wound up without an expert examination and passing of the trustee's accounts.

The above features and others will receive the careful consideration of your committee, who will welcome the co-operation of members of the association, and would particularly appreciate an expression of view at the annual meeting upon the points above raised.

Workmen's Compensation, New Brunswick

The commission investigating Workmen's Compensation in New Brunswick brought in a report recommending an act along the lines of the Nova Scotia Act, which, it will be remembered, was drawn largely on the model of the draft act prepared by the Canadian Manufacturers Association on the occasion of the investigation in Ontario. The New Brunswick Act follows still more closely the Canadian Manufacturers draft, the commissioners having definitely decided against either the Ontario or the Manitoba models.

After determining the outlines of the measure, the investigating commissioners indicated that they would welcome the assistance of Mr. Wegenast, in the drafting of a measure. Your committee accordingly instructed Mr. Wegenast to go to St. John, where he spent some time in conference with the investigating commissioners and the Ministers of the Government, and in assisting in drafting an act which your committee regard with a good deal of satisfaction. There are a number of features, as is to be expected, in which compromises have been made to meet the views expressed by representatives of the labor interests, but in the administrative and insurance features of the Act, which constitutes the bulk of a Workmen's Compensation measure, the New Brunswick Act is a considerable advance over any other similar act in Canada or the United States. Your committee cannot avoid some apprehension as to whether the Act will be as successful in New Brunswick as it would be in a province affording a larger industrial basis. The number of industries of one kind being small, it will be necessary, in order to secure a sufficiently large class for assessment purposes, to combine dissimilar industries in such a way that there may be difficulty in establishing proper differentials in rates and securing class co-operation in the matter of accident prevention. It has been suggested that the industries might all be left in one class and simply rated as an insurance company would rate, but this would depart from one of the cardinal principles of the system by which the rate is automatically determined by the accident rate of the class instead of the judgment of a rating officer. It has been extraordinarily difficult to divorce workmen's compensation systems from inapt practices and conceptions borrowed from the practice of liability insurance, and it would be unfortunate if the administration in New Brunswick were to start on the same round of false precedent.

The difficulties likely to arise from imperfect classification or inequitable rating may be counteracted in New Brunswick, however, by an ingenious provision which is new in workmen's compensation legislation, and which authorizes the insurance or re-insurance of any employer or class with an underwriter. This would enable employers who are dissatisfied with their rate or classification to apply for the privilege of having their risk insured or re-insured by a private insurance company, paying, however, an additional percentage to the Board. This plan affords employers the benefit of a measure of competition, and at the same time assures the Board control of the insurance and the administration of the compensation.

A number of features of the Act may be briefly indicated: The Act applies to all the industries of the province except farming and domestic services; it does not exclude Government undertakings, and makes provision even for the admis-

sion of Dominion Government railways. Provision is made to prevent the payment of compensation out of the employers' funds in cases where the employer has not paid into the funds. An aggregate limit of \$3,500 is placed upon all compensation claims. Compensation for permanent partial disability is placed upon a lump sum instead of a pension basis. The Act is confined to accidents occurring within the province. Claims for compensation are to be made within fourteen days, though if there is sufficient reason, a claim may be allowed if made later, but not after one year.

Profiting by the experience in connection with the Halifax disaster, the New Brunswick Act makes exception of fortuitous events unconnected with the employment in which the workman was engaged. Compensation is to be paid "unless such injury was, in the opinion of the Board, intentionally caused by such workman, or was wholly or partially due to intoxication or serious and wilful misconduct on the part of the workman or to a fortuitous event unconnected with the industry in which the workman was employed."

The provisions respecting assessment are made more definite than in the other provinces, where difficulty has been experienced owing to the informal and indefinite manner in which the assessment was carried out. In Ontario, as a result of a decision of the Supreme Court, there has been some improvement in the method of assessment, but the conception still appears to be that an informal letter or other expression of one of the members of the Board is sufficient to establish the liability of an employer. The New Brunswick Act provides that assessments shall be made under seal in a form laid down by the Act. Notice of all general assessments is to be published in the Gazette. The Act also provides that any workman or employer or association interested in the decision of any matter by the Board shall be entitled, on application, to a public hearing, and shall be entitled to have a certificate of the decision. Provision is made, as in the Nova Scotia Act, for an appeal to the Supreme Court *en banc* on questions of law. Where a certificate of an assessment is filed against an employer as a judgment the employer may appeal as in the case of any other judgment.

Associations of employers are recognized not only for the purpose of accident prevention work, but are entitled to represent their members in any matters of common concern. Associations are entitled to be heard on any appeal from a decision of the Board. Each association is entitled to a statement of the receipts and expenditures of the Board in respect to every employer in the class. Any association may also appoint an auditor to act in conjunction with the Government Auditor, or may appoint an auditor of its own to audit the funds of its class.

The Workmen's Compensation, Alberta

The Province of Alberta also enacted a new Workmen's Compensation Act at the last session. The Act adopts the principle of collective insurance as laid down by the Canadian Manufacturers Association, but the Act is drafted on the terms of the Ontario Act and contains many of its anomalies, though it is not attempted, as in the Ontario Act, to embody both the collective liability and the individual liability principles in the same Act. As regards mining, the Act goes into operation on the 1st of August, 1918, but as regards manufacturing and other industries it does not begin until the 1st of January, 1919. The Act does not apply to railway companies. The mining industry is divided into four classes, and it is apparently contemplated that all the rest of the industries, which are enumerated in the same terms as the omnibus clause on the Ontario Act, are to constitute one class. According to the terms of the Act "if any question arises as to whether an industry or any part thereof is an industry to which this Act applies, the question shall be decided by the

Board, whose decision shall be final." This is the most far-reaching provision of this kind contained in any of the Acts, and makes the administering Board almost entirely the arbiter of its own jurisdiction.

The Act does not contain an express exception of farm laborers and domestic servants. It will be interesting to see how the administering Board will interpret its duty towards farm laborers, who in many of their operations are literally covered by many of the items in the omnibus enumeration of industries, such as, for instance, "teaming," "excavating," etc.

Absolute Waiting Period

The Act contains one feature for which the Association has ~~contended in other provinces, namely, an absolute waiting period.~~ If a workman is disabled for ten days, he receives compensation from the day of the accident, but if he is disabled for less than ten days, he is paid from the fourth day after the accident.

The schedules of compensation for permanent disability are adopted from one of the American Acts, and instead of being on a pension basis, are based on an anatomy schedule giving so much for a hand, so much for a leg, so much for a finger, etc. This, while it may result in less cost to employers than the system as administered in Ontario, your committee regard as a step in the wrong direction. It is quite proper for the administering Board to have its anatomy schedules, but there should be room for variation of treatment in individual cases. It is obvious, for instance, that all fingers of all workmen are not of the same value. The Act is more modest than that of any other in its aggregate limitation, it being provided that no claim for compensation shall in the aggregate exceed \$2,500.

Permanent disability being placed on a lump sum basis, the question of current cost as against capitalization comes into play only as regards cases of death. The Act provides for setting up reserves "if in the opinion of the Board it is necessary."

The Act is quite defective in its provisions for assessments, adjustment of assessments, etc., and like the Ontario Act leaves it to the administering Board to frame a working system apart from the Act or in defiance of it. The Act requires employers on or before the 20th of the month to submit a statement of the wages for the preceding month, and the assessments are to be made on the basis of these statements, the intention being apparently to make assessments monthly, though it is provided that they shall be "at least quarterly." The assessment may be based on the pay-roll or may be for a specific sum; and it is not to be less than \$5 for any assessment period. Pending the assessment, it is apparently the intention to pay the compensation out of the Consolidated Revenue Fund of the province, whose generosity is to be rewarded with interest at the rate of 6 per cent. There is no provision for payment of any part of the cost of administration by the province.

Workmen's Compensation, Ontario

The operation of the Ontario Act has continued to demonstrate both the correctness of the principle of the collective liability system, and the defects of its improper application. In addition to the provisions of the Act to which employers object employers have found it necessary to reckon definitely with a fixed objection of the Board to dealing with employers in any organized or aggregate capacity. The Accident Prevention Associations, which were intended to act as representatives of their respective classes, have been definitely relegated to the purely formal functions of selecting inspectors and directing their activities, and the most of them have, in fact, been merged in one association called the Industrial

Accident Prevention Association. This arrangement was practically forced by an ultimatum of the Board which could not be disregarded without making new arrangements for financing the associations. When the decision was arrived at to acquiesce in the ruling of the Board which prevented the safety associations from acting in any representative capacity, it was expected that the Canadian Manufacturers Association would take up these representative functions. By reason of the Board's attitude, however, it was found impossible to carry out this plan, and the fact is that employers have remained for several years without any adequate means of representation.

It should be said that employers individually have generally been treated by the Board with courteous attention, and have been encouraged to air their grievances before the Board. The Board has moreover shown its willingness to meet committees of employers for discussion; but it has expressed emphatic dissatisfaction at having employers meet by themselves to discuss matters in connection with the Act and to present the result of the discussion in a definite representative way. This method of procedure, therefore, which is employed by this Association before the Railway Board and other public bodies, will not be available before the Workmen's Compensation Board of Ontario, unless a change of policy be brought about.

Some Ontario Defects

Some of the defects of the administration in Ontario are well enough known not to require detailed statement. Reference should, however, be made to a number of points with which employers generally may not be directly in touch. One feature which is being brought out more or less definitely is the effect of the Act in securing compensation to employees whose employers have not paid their assessments. As the Act now stands, any default in payment of assessments by one employer must be made up by the other employers in the class. By reckoning on the basis of claims allowed to employees of non-paying employers it is possible to estimate the amount of assessments annually defaulted or lost. No statistics on the point are given in the Board's annual report, but it is understood that the amount is a very large one according to the Board's own computations. A similar condition exists in Nova Scotia, and it was a recognition of these conditions in the two provinces which actuated the drafting commissioners in New Brunswick in making adequate provision for their prevention in that province.

Another question which is now beginning to develop in concrete shape is that of reserves. A large and increasing amount of money is being held by the Workmen's Compensation Board at its absolute command and disposal. The amount is now equivalent to the capitalization of some of our substantial financial institutions. Without in the slightest degree impugning the efficiency or honesty of purpose of the Board, your committee desire to express their doubt as to whether so large a financial responsibility would anywhere else be entrusted, even in a private institution, with so little check upon its management. It need not be said that as regards public funds the position of the Workmen's Compensation Board is entirely unique.

It is not, of course, the mere possession and management of this large amount of money which constitutes the only objection. The size of the amount and the freedom from check inevitably tend to large thinking and quick decision in the matter of compensation awards, particularly where the collection and disbursement are in the same hands. It may well be doubted whether any organization, however upright and competent, could wholly resist the tendency. The tendency is moreover increased by the uncertainty as to the

adequacy or otherwise of the reserves; that is to say, the doubt whether more has not been set aside than is needed. The tendency referred to has brought about serious results in other jurisdictions, even where the control of the reserves and the control of compensation awards are in different hands. These considerations are bringing home to some of the more far-sighted employers the practical bearing of the question of current cost as against the capitalization plan which was so much discussed at the time of the framing of the Ontario Act. Another factor which is bringing home the question of reserves is the application of the analogy of the system of pensions for soldiers. We can no longer avoid seeing workmen's compensation in the light of a department of a system of social insurance with possibilities of development, as in other countries, into a variety of forms. Is it conceivable that a system of pensioning soldiers, for instance, would be established by setting up the capital value of the pensions payable in future years? There are certain classes of obligations which are not a proper subject for capitalization, but which depend in the last analysis on the financial solidarity of the country. Pensions to injured workmen are of this nature. In Germany, before the war, a reserve of over one billion dollars had been accumulated against similar obligations, not because of any theory of capitalization, but frankly and avowedly to provide for a time when, owing to war conditions, employers would not be able to meet their assessments. Can it be supposed that this reserve is still intact? A pension system must stand or fall with the prosperity of the country and the government which stands behind it, and no reserve, however large, will insure any different result. Why therefore should the capital of employers be tied up or let out on investments, however competently handled?

The Question of Rates

Another matter which comes home very directly to employers but which requires consideration from a more general standpoint than is generally taken is that of rates. Officials of the Board appear to be disposed to take satisfaction out of a comparison with the published rates of other jurisdictions, as, for instance, the State of New York. It must be observed, however, that in New York, as in most of the other states, employers have their option of insuring in the state system or in private insurance companies, and the rates of the state system only represent the more hazardous and undesirable risks, the select risks being insured with the liability insurance companies, or by employers in mutual funds. But whatever the rate, it cannot in fairness be compared generally with the rates paid by Ontario employers. The Ontario employer may be more careful, or may have a more up-to-date plant or a better organization, or he may have done, as many American employers are doing, namely, organize his safety service so as to eliminate accidents almost entirely, in all of which cases he should have the benefit of his enterprise just as he would have it in the United States.

A root difficulty in the Ontario system, in many of the classes at all events, is the defectiveness of the classification. The Board has sought to cope with this by a detailed rating system on the plan of the practice in the State of Ohio, which was based in turn on the practice of liability insurance companies. Such a practice is unnecessary and unsuitable in a state insurance system, and was not anticipated by the draftsman of the Ontario Act, though the provisions were left in such indefinite form as to permit the variation. If industries were properly classified and sub-classified the rate would take care of itself and would be automatically determined by the number of accidents and their seriousness. This is the plan upon which the Act of the State of Washington operates. The classification under the Ontario Act

being defective, the whole problem of rating is rendered exceedingly complex and defies equitable adjustment by the exercise of the kind of judgment which the liability companies formerly sought to apply.

Work of Safety Associations

If the safety associations were allowed to exercise their proper functions they would serve as a useful check on the classification and the rating of industries, as well as an effective agency in applying merit rating. As it is, both the Board and the employers' associations are working, as it were, in the dark, for no reason, apparent to the employers, than to avoid the possibility of adverse criticism of the Board and its action. The safety associations found it increasingly difficult, and finally impossible, to secure from the Board the particulars of the funds of their respective classes. They have no way of checking up the receipts and disbursements of individual employers in relation to the funds, and therefore have no way of judging the effectiveness of their work or the equity of the assessments, which should reflect results of the work.

Apart from their rights as mutual contributors, it is proper that employers and their associations should have an opportunity of checking and verifying the disposition of the funds, whether these funds are regarded as being handled in trust for employers or for the public. The administration of the funds is not under any such supervision as is given to other public funds in the Public Accounts Committee of the Legislature, where the smallest items are the subject of public discussion and criticism. It is the more important for this reason that the accounts should be subject to check, by or on behalf of the employers, who are the only persons vitally interested; and hostility to criticism or effective supervision and check cannot readily be interpreted favorably. Municipal taxes and every other type of taxes in this country are subject to some form of public check. The assessments of the Ontario Workmen's Compensation Board are the only example we have of taxation without representation.

Workmen's Compensation, Manitoba

Some of the difficulties which your committee have anticipated as likely to arise in the absence of proper check have been exemplified in Manitoba, where an investigation by a Government commission has revealed a serious condition of extravagance and inefficiency. This condition was found fully developed after a little more than a year of operation, and although the functions of the Commission were very limited, and the amount of money in its control relatively insignificant as compared with the other provinces.

The investigation was undertaken at the instance of the Manitoba branch of this association, acting with the support of the Winnipeg Board of Trade and other bodies. A report of the findings of the Commission were published in the March number of INDUSTRIAL CANADA, for which reason it is not necessary to enter into details here. The report comments in cogent terms on some of the factors mentioned above. It is stated, for instance, that "one very serious omission that must be pointed out is that there are no original orders on file except those relating to awards on claims, and apparently copies of printed circulars are the only record. In view of the fact that the Board's functions are in many respects those of a court, whose orders can be enforced by law, this omission might have most serious consequences and should be rectified without delay." As has been pointed out by your committee on various occasions, the practice of the Ontario Board, and, it is to be feared, in other provinces as well, has been exceedingly loose. So far as your committee is aware it is still true in Ontario that no formal hearing has been held,

or formal decision given, by the Board on any question that it has dealt with. It need scarcely be said that while red tape and undue formality are to be avoided, a certain definiteness and conclusiveness of practice and decision is absolutely essential for the successful carrying out of the functions of such bodies as Workmen's Compensation Boards, Railway Boards, etc.

The difficulty with the Government over the payment of the cost of administration, to which your committee have in the past made reference, has been resolved by the Government paying \$100,000 a year toward that cost. The understanding had been that a larger amount was to be paid, but as the cost of administration has been considerably less than anticipated, the action of the Government must be considered as fairly satisfactory, leaving as it does only a small percentage of the cost of administration to be borne by employers.

Workmen's Compensation, Nova Scotia

The terrible disaster at Halifax brought the Workmen's Compensation Board in that province face to face with a question which the Association had had under serious consideration in connection with all the Workmen's Compensation Acts that have been adopted, viz., the liability of employers for the result of fortuitous events unconnected with the industry in which they occur. The Halifax disaster was totally unconnected with any industry of the Province of Nova Scotia, unless it might be said to be that of navigation. Was it just or expedient that a manufacturer in the ruined district, or the group to which he belonged, should be obliged to pay compensation in respect to those of his employees who were killed or injured by the explosion? When the Nova Scotia Act was drafted the question of liability for fortuitous events was discussed, and with a view to relieving employers of the liability the definition of 'accidents' which had been adopted from the Ontario Act, was struck out by the Legislature. Notwithstanding this, the Board, relying on precedents under the English Act, began paying the claims arising out of the disaster. The matter was taken up by representatives of the Association with the Board and the Government, and an understanding was arrived at that while the Board would pay the claims, they would be re-imbursed out of the funds supplied by the Dominion Government. Your committee could not regard this arrangement as satisfactory, involving, as it does, the creation of a precedent of paying claims of the nature indicated. There should be no objection to using the good offices of the Board as a channel for disbursing the funds, but it is hoped that adequate amendments will be secured not only in Nova Scotia but in the other provinces, to prevent such a liability from falling in the future in the class of industrial accidents.

Paying Halifax Claims

In connection with the question of paying the Halifax claims as well as a number of other questions before the Nova Scotia Board, the Assistant Secretary of the Maritime Branch of the Association acted before the Board as the representative of the Manufacturers of the province. In view of the situation in Ontario, your committee note with satisfaction the readiness of the Board to accept this obviously proper arrangement which is, however, provisional only, pending the organization of employers' associations with power to act in representative capacity as well as to engage in safety work.

A number of amendments to the Nova Scotia Act were made at the last session of the Legislature. In this connection your committee desire to record their protest against the practice, not only in Nova Scotia, but in the other provinces, of administering Boards framing, behind closed doors,

amendments which are brought in by the Government and passed without any adequate opportunity for consideration and representation by the parties interested. While a certain connection between the Workmen's Compensation Board and the Government is inevitable, nothing could more quickly bring a Workmen's Compensation system into disrepute than the assumption that it was a department of the Government for which the Government was politically responsible. It is no doubt to be expected that Boards will make suggestions for amendments, but where such suggestions involve contentious questions it is obvious that the parties interested should be given an opportunity of being heard, more particularly as the subject is too highly technical for dis-



—B. and C. Press Photo

Lloyd Harris

Russell Motor Car Co., Limited, Toronto
Retiring Chairman, Legislation Committee

cussion, generally speaking, on the floor of the Legislature. The functions of a Workmen's Compensation Board are judicial, not political.

Miscellaneous

Your committee have had to deal with a considerable variety of other subjects which, owing to their relative unimportance or of the inconclusive nature of the deliberations, it is not expedient to discuss at length. Minimum wage legislation was introduced in Manitoba, British Columbia and Nova Scotia. In Manitoba the measure was adopted in a modified though still objectionable form. In Nova Scotia prompt representations were made on the part of the Association and the bill was afterwards withdrawn. In British Columbia the bill was also withdrawn.

The attention of several of the provincial governments was called to inconsistencies in respect to the use of the word "Limited" at the end of the name of incorporated companies, and certain concessions were promised.

The support of the Association was given to a general proposal of the Canadian Bar Association for legislation respecting uniformity of provincial laws, and it is understood that a number of provinces have made provision for defraying the expenses of commissioners to make a study of provincial laws to this end.

A bill introduced in Nova Scotia requiring all property in that province to be insured through agents resident in Nova

Scotia was opposed on behalf of the Association, and was afterwards dropped.

Approval was expressed to the Dominion Government of the Daylight Saving Bill.

All of which is respectfully submitted.

LYOYD HARRIS,
Chairman.

H. MACDONALD,
Assistant Secretary.

The report of the Legislation Committee was presented and read by the Assistant General Secretary, Mr. Macdonald, after which it was moved by Mr. Roden, seconded by Mr. S. Harris, that the report be adopted.

The Workmen's Compensation Board

MR. J. F. ELLIS: "This is a very important report and I don't think we should gloss over it. At the same time I think there is no time now to discuss it. I would like this referred to the Executive Council to consider very carefully. There has been a lot of good work done in the past year in connection with the Workmen's Compensation Act, particularly in New Brunswick; the Association helped them in forming their Act down there, which is a step in the right direction. Unfortunately in Ontario the Association and the Workmen's Compensation Board do not see eye to eye. In fact we are at arm's length. We cannot send a deputation from the Manufacturers Association to that Board to consider any questions it may think it wise to discuss with them; they will not listen to us, they will not hear us.

"If I have any grievance I can go to them and they will treat me most courteously and will consider anything I bring before them. If the industry I am associated with has any grievance and we come together they will hear what we have to say, but if the Legislation Committee of this Association took up the matter and wished to send a deputation to the Compensation Board to discuss the matter they will not hear them for one minute; they refuse to see them or hear them.

"We know, some of us, why that is and it is a position that is almost intolerable, and I think this question should be very carefully considered by the incoming Executive Council and see if a different feeling could not be brought about between the Manufacturers Association and the Workmen's Compensation Board of the Province of Ontario. So that while we may receive and adopt this report, if you wish, at the same time I think you ought to add to your resolution that it should be referred to the Executive Council to give very careful consideration thereto."

MR. RODEN: "In moving the adoption of the report, I presume the Executive Council will have authority to act upon any recommendation this report might make and would take it into its consideration and deal accordingly. I believe we should have a resolution upon that point, however. I think that is the procedure. If this report is adopted, any matters arising from this report are proper for the Executive Council to deal with."

MR. ELLIS: "In the past, when the report has been adopted by the annual meeting, that is the end of it. I would not like to see this report relegated, as it would be if the procedure that has been followed in the past is adopted, and I would suggest that you add to your resolution that it be referred to the Executive Council to further consider."

MR. RODEN: "Then I would also add, in moving the adoption of the report, that the Executive Council be asked to consider the proposal made in the report and see what action it is possible to take."

MR. MCKINNON: "Wouldn't it be better to use the word 'received and referred to the Executive Council'?"

THE PRESIDENT: "I think, gentlemen, what has been done in the past, is, speaking widely, complete in itself. You may adopt that portion of it, but I think a further reference of it to the Executive Committee rather than to the Executive Council would be in order, and the Executive Committee will study the question and then report to the Council for action."

MR. RODEN: "I would amend my motion in that way, that the report be adopted and that the matter be referred to the Executive Committee to make recommendations to the Council."

MR. S. HARRIS: "I think it should go to the Council and not to the Committee first. The Committee may not see eye to eye with the Council. The Council ought to have some say."

MR. RODEN: "The Council will have the final say."

MR. THOMAS: "The matter of course will come before the Executive Committee, and as I was a member last year of the Executive Committee I can speak quite freely, but it would be pertinent with the Executive Committee not to bring this before the Council. I don't believe that action would be taken. But, it is desirable that this question of the Workmen's Compensation Board particularly should go before the Executive Council for action. It does not matter how the resolution is now phrased as long as it brings about that result, but I for one should be very sorry not to see that particular question brought before the Executive Council at an early date for prompt and, I hope, effective action."

THE PRESIDENT: "Any question which involves a matter of policy as wide as this contained in this report, the Executive Committee surely would refer the matter to the Council. If it was a matter that after consideration they feel is unimportant they would not pass it on to the Council, but this matter is so important it must go on to the Council. However, you could make it certain if you liked by asking the Executive Committee to give consideration to it and that their findings be submitted later to the Council."

MR. THOMAS: "I think perhaps it would meet any objection if we said this report be referred to the Executive Committee for its presentation with recommendations to the Executive Council."

The President put the motion as amended, which on a vote having been taken was declared carried.

Annual Meeting, A.S.M.E.

Interesting Paper Read, Address Delivered and Officers Elected for Ensuing Year

The annual meeting of the Ontario Section, American Society of Mechanical Engineers, was held in Toronto, May 27th. The technical paper for the evening was presented by Mr. J. H. Billings on "Strength of Cast Iron in Bending as Affected by Variations in Cross Sections." Following this the Society was favored with a very interesting and stimulating talk by Mr. Calvin Rice, General Secretary, who had arranged to stop over in Toronto on his way back to New York from a visit to some of the Society's branches in the Middle Western States.

The results of election of officers for the Local Executive were announced as follows:

Chairman: Professor R. W. Angus of the University of Toronto; Secretary: C. B. Hamilton, Hamilton Gear & Machine Company; Members of Executive: James Milne, City Hall; J. H. Billings, University of Toronto; T. B. Ahara, Canadian Fairbanks-Morse Co.

RECEPTION & MEMBERSHIP

Annual Report of the Membership Committee

YOUR Membership Committee are pleased to be able to report that the termination of another fiscal year marks continued growth of the Association.

The Association began the year on May 1st, 1917, with a membership of 3,239. The applications received and passed totalled 255, the resignations 105, bringing the total membership on April 30th, 1918, up to 3,389, a net gain of 150 for the year. The increase of membership is derived in the following proportions:—

Prairie Provinces	91
Ontario	35
Maritime Provinces	20
British Columbia	8
	154
Less: Loss in Quebec	4
Total	150

In connection with special meetings of Trade Sections convened during the year, it appeared that some firms who were not members of the Association, nevertheless recognized that they were receiving direct help from the Association. Your Committee, accordingly, after discussion, resolved to make a general aggressive membership campaign by members of the Association themselves, covering the Dominion, with the exception of Toronto, which was pretty thoroughly canvassed last year.

The Committee were fortunate in enlisting the competent services of Mr. J. Allan Ross, of the Wm. Wrigley Jr. Co., Limited, as organizer, who laid plans for the campaign. While this effort did not prove very fruitful, owing to the difficulty of members being able to devote the necessary time under the present stress of business conditions, it was, nevertheless, helpful in some measure in increasing the membership, and its good effect will continue to be felt.

It is fitting to record here that the activities of four members in their own towns resulted in the reception of about sixty per cent. of the total applications received directly through members. A number of others did good preparatory work in smaller or less developed fields. They will not consider that invidious distinction is being conferred on those members whose efforts were so successful, namely, Messrs. T. H. Watson, Galt; J. P. Knechtel, Hanover; R. A. Stinson, St. Catharines; G. D. Mackinnon, Sherbrooke. Card lists of prospects, carefully compiled by our Commercial Intelligence Department, were of especial service in facilitating the campaign.

The actual cash collections from fees for 1917-18 were \$78,400, as against \$57,751 for the previous year, an increase of \$20,649.

A summary of fees paid by 2,112 members under the new scale of fees for a period of nine months shows a 45% increase. If this rate is maintained, it is reasonable to assume that by the time the full earnings will come into effect, the result will more than meet our expectations when the increased rate was adopted.

The following table shows the distribution of the membership in each Province, according to the fee paid, at April 30th last:—

By Provinces...	\$10	\$15	\$20	\$25	\$35	\$60	\$75	\$100	\$150	\$200	T1
Ontario	632	433	266	79	190	126	87	45	19	14	1891
Quebec	242	176	96	23	77	58	41	18	15	9	755
Nova Scotia	42	27	6	4	6	3	3	3	—	2	96
B. Columbia..	34	18	4	2	6	6	—	—	2	—	72
New Bruns'k..	24	16	8	5	6	2	4	2	2	—	69

By Provinces...	\$10	\$15	\$20	\$25	\$35	\$60	\$75	\$100	\$150	\$200	T1
Manitoba	231	60	14	8	19	4	3	2	—	—	341
Alberta & Sask.	116	31	6	5	3	—	—	1	—	—	162
Pr. Edward Is.	2	1	—	—	—	—	—	—	—	—	3
	1323	762	400	126	307	199	138	71	38	25	3389

The above table indicates that the potential revenue of the Association from membership fees for the year ended April 30th was \$84,655. On April 30th, 1917, it was \$62,015; on April 30th, 1916, it was \$58,240. Included in the above sum of \$84,655, however, are the fees of members who may not renew their membership, and therefore, the actual collections are usually somewhat below the anticipated revenue at the beginning of the year.

In dealing with resignations, the usual practice has been followed of accepting only after it is made apparent that the membership cannot be held. In cases of liquidation or discontinuance of manufacturing operations, there is, of course, no room for argument. Most of the resignations accepted this year were due to this cause. Your Secretary knows of no instance of dissatisfaction with the Association, nor of a serious disposition to impugn any of its policies. On the contrary, cordial letters of appreciation of the services of the different departments of the Association were our common and gratifying experience in the course of the year.

Apart from Canada's future industrial development, the membership of the Association is susceptible of wide extension. The need for the services which the various departments of the Association are qualified to render was never so great. Under present conditions, the members of the staff have not the necessary time, handicapped as they are by other duties, to call personally upon those who are not but should be members of the Association. But there is virtually no limit to what the members of the Association individually could do if each would but take a personal interest. The results that have attended the efforts of the few who have helped show that herein lies an unceasing opportunity for future gains, and your Committee would earnestly bespeak the co-operation necessary to that end.

All of which is respectfully submitted.

WALTER C. LAIDLAW,
Chairman.

H. MACDONALD,
Assistant Secretary.

The report of the membership committee was read by Mr. W. C. Laidlaw, chairman of the committee, who moved, seconded by Mr. Roden, that the same be adopted.

MR. SAUNDERS: "My town may be similar to some other towns. We have four or five manufacturers who are not members of the Association. I called upon them personally and discussed the matter with them and they said they had never seen the literature of our Association. I was going to suggest that it would be a good plan for those who have the campaign in charge to get a list of all manufacturers in Canada who are not members of the Association and send them our literature, telling them the different lines in which we are engaged and giving them information as to the advantages of joining our Association."

THE PRESIDENT: "I may say such literature has been published and was circulated very freely and it should have been sent to you, Mr. Saunders."

The President put the motion to adopt the report of the Membership Committee, which, on a vote having been taken, was declared carried.



Annual Report of the Insurance Committee

DURING the past year your Committee have given considerable attention to the investigation which is being carried on in Toronto by Hon. Justice C. A. Masten as Commissioner under the "Ontario Insurance Commission."

The early part of the sittings was devoted to the operations of the Canadian Fire Underwriters' Association, and a number of our members appeared before the Commission and gave evidence as to what they considered unfair treatment regarding rates and other inequalities. It was shown that a very large portion of the insurance business is controlled by the Canadian Fire Underwriters' Association, and our members think they do not get the consideration they otherwise would receive. While the cost of insurance must always be controlled by the ratio of fire losses, we think it has been shown that the expense of carrying on insurance business is wholly disproportionate to the service. There seems to be a strong desire on the part of the Canadian Fire Underwriters' Association to have a tax put on premiums paid to unlicensed companies, whose head office is outside Canada. When it is borne in mind that a very large portion of fire insurance in Canada is being carried by United States companies, it can be readily realized that a considerable increase in cost to many of our members would thus be created.

The argument advanced by the Fire Underwriters' Association is that if the manufacturers are to have protection, the insurance interests should be similarly protected. But the cases are not parallel. Because there is a tax on manufactured goods entering Canada is no reason that those desiring insurance should not be at liberty to place it where they please.

Accordingly, your Committee made the following submissions to the Ontario Insurance Commission:—

1. The control exercised by the Canadian Fire Underwriters' Association over fire insurance rates and terms has approached the nature and proportions of a monopoly.
2. The control has manifested itself in arbitrary ratings and rulings which are frequently discriminatory and otherwise prejudicial to manufacturers and other property owners.
3. The practice of the Canadian Fire Underwriters' Association is not sufficiently sensitive to merit and does not afford a proper incentive for fire protection work.
4. The only effective protection which the insurer now has against exorbitant and arbitrary rating is the competition of unlicensed companies, and to interfere with such competition would be to deprive the insurer of his protection.
5. The proposal of a tax on premiums paid to unlicensed companies on contracts entered into outside the province should not be entertained. Such a tax, if practicable and if within the powers of the Provincial Legislature, would seriously impede the competition of such institutions as the New England Mutuals and Lloyd's.
6. In order to promote competition, the present tax paid by brokers on premiums for unlicensed insurance and the tax on fire losses, which is illogical and ill-advised, should be abolished, particularly in view of the fact that no such taxes are levied on the re-insurance placed by licensed companies.
7. The control of the Canadian Fire Underwriters' Association over Goad's Plan is inimical to the public interest and should be prevented either under the copyright law or under the law respecting combines.
8. Government control of rates would be very difficult to apply and would not afford an adequate substitute for competition.

The latter part of the Ontario Insurance Commission's work consisted of taking evidence with respect to fire prevention. In the course of the investigation, a considerable

body of expert evidence was cited and valuable information furnished which should be in the hands of every member so that we may all realize the drain and magnitude of our fire waste.

While unrestricted competition is a factor in maintaining rates at a reasonable level, it is only a subsidiary factor. The factor which finally determines whether fire insurance rates shall be low or high is the annual rates of fire losses, and no campaign to effect a reduction in the cost of fire insurance can have hopes of much success unless it aims principally at a diminution of our fire waste. When the fire waste in Canada bears the same relation to our property value as is the case in Great Britain, we may expect to be paying about one-third of our present insurance rates; but until our fire waste is considerably reduced, there is no possibility of any material reduction in rates.

Fire Waste in Canada

Fifty million dollars went up in smoke last year in Canada—physical property, buildings, industrial plants—to say nothing of the value of business "goodwill" and other intangible business assets in the form of irretrievable records and valuable business documents that went with this huge loss. It cannot be disputed that this is largely the result of carelessness and deplorable unpreparedness. Experts make the statement that at least half of this enormous loss can be prevented if taken in hand seriously.

Fire Waste—Economic Significance

Fire waste, while always local in inception, is national in its incidence. Its real significance to the community is most clearly shown by its effects upon:

- (1) Natural resources, by the destruction of building materials;
- (2) Commercial credit, by the impairment of security;
- (3) Industrial progress, by its handicap upon production;
- (4) The public at large, which finally pays the cost of fire.

The Present Emergency

Deplorable as is the effect of fire waste upon Canada's domestic affairs, in the present crisis it assumes an immeasurably greater significance. Other countries are to a large extent depending upon Canadian production. Our governments are making strenuous efforts to stimulate food production and curtail home consumption. Yet practically nothing is being done to protect from destruction by fire that which has been produced. During the three years 1915, 1916 and 1917, fires have damaged or destroyed no less than 145 grain elevators, 45 flour and grist mills, 59 bakeries and confectionery factories, 26 packing-houses and cold-storages, 36 canneries and butter and cheese factories, 334 warehouses and storehouses, and 3,746 farm barns. The aggregate value of the food products rendered worthless by these fires exceeds \$16,000,000. At a time when the future of Canada and her allies is dependent upon the conservation of every ounce of food and productive energy, such waste is of the gravest importance. Not only self-interest but the higher motives of patriotism imperatively demand that effective measures be immediately taken to prevent fire and its further endanger-

ment of the cause for which we are fighting. As President Wilson has truly said, "Preventable fire is more than private misfortune; it is public dereliction."

Fire Waste in Foreign Countries

One essential factor that is apt to be overlooked in making comparisons between fire losses in Canada and Europe is the difference in the per capita property values at risk. A more truthful comparison of actual conditions is indicated by the frequency of fires. Statistics show that fires occur in Canada in the ratio of one to every 600 people, and in Europe in the ratio of one to every 3,000 people. That is, Canada stands with potentialities for conflagration five times greater than Europe.

In Canada, taken as a whole, the number of fires has increased much more rapidly than the population. For instance, the city of Toronto had 385 alarms in 1890, 746 alarms in 1900, 1,267 alarms in 1910, and 2,080 alarms in 1916, an increase in the twenty-six years of 440 per cent. Toronto, in this respect, is representative of practically every other municipality in the Dominion. Fires have also increased in frequency of recent years in such European cities as London, Berlin and Paris, due, no doubt, to the complexities of modern life, but the number has remained practically stationary in the smaller European towns.

The real significance of the comparison lies in the fact that, whereas the property loss per alarm has increased in Canada entirely out of proportion to city growth and expansion, the loss per alarm in European cities has decreased. This fact can, in a measure, be accounted for by appreciation of values in Canada and the increasing number of fires that involve adjoining properties. Exact figures of the loss due to exposure are not readily obtainable, but the most conservative estimate indicates that at least 14 per cent. of the total property loss of Canada is caused by fires extending beyond the building of origin. On the other hand, in cities such as Leeds, Sheffield, Bristol, Antwerp, Brussels, Milan, Rouen and Havre, practically every fire is confined to the building in which it starts. In Vienna, Florence, Dresden, Budapest and Moscow, every fire in 1914 was confined to the floor on which it originated. In Hamburg, Germany, the extension of any fire to an adjoining building has been unknown since 1842. In Vienna, there is no case known in which fire has involved two buildings, and in only seven instances in recent years has damage been caused to more than one floor of a building.

The Canadian Record

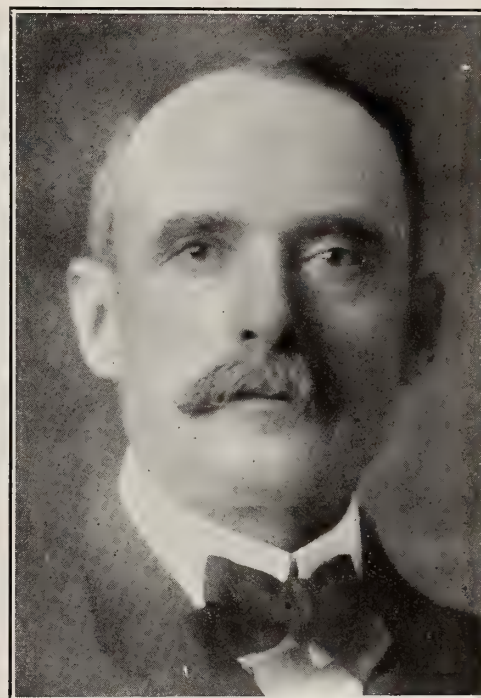
Such results, contrasted with the Canadian record, of 1,378 fires spreading to 6,786 buildings during the four years, 1912-1915, are extraordinary. Moreover, they were obtained with the most inadequate fire protection facilities. European cities, apart from London, Paris and Berlin, have paid little attention to modern fire protective equipment. They have directed their chief energies to fire prevention. Municipal expenditures have been devoted to the control of building construction and maintenance. On the contrary, Canada has developed very elaborate appliances, methods and personnel; the fire brigades of large Canadian municipalities are incomparably superior to those of other countries. In this course of action lies one of the most tangible differences between the respective policies of Canadian cities and those of Europe. To prevent rather than extinguish fires has not impressed itself as being a part of the function of public bodies in Canada. Consequently, the annual maintenance costs of city fire departments average \$1.43 per capita, fire losses \$2.96 per capita, and insurance rates \$1.18 per capita in Canada, as compared with 21 cents, 71 cents and 26 cents, respectively, in Europe.

The striking contrasts between the losses, frequency and extent of fires in European countries as compared with Canada are due to differences in the regulation and control of these three prime factors of fire waste:—

- (1) The general character of the buildings;
- (2) The laws governing the conduct of the people;
- (3) The viewpoint and civic responsibility of the individual.

The chief structural conditions that operate to effect a small fire loss in Europe are the general use of non-combustible materials, the restricted height and area of buildings in cities, and the stringent requirements of building codes. Practically all European countries, with the exception of Norway, Sweden and Russia, prohibit the erection of frame buildings within municipal areas. Very few wooden buildings exist even in rural districts, and whole communities of inflammable structures, such as are common in Canada, are unknown.

In France, government regulations control all dangerous trades and hazardous occupancies. In Germany, rigid control



—B. and C. Press Photo

W. H. Shapley

Sterling Actions & Keys, Limited, Toronto

Re-elected Chairman, Insurance
Committee, 1918-1919

over all building operations is exercised by the different municipalities. The strictest regulations are enforced regarding heating, lighting and the general maintenance of buildings. The German civil code makes every individual responsible for the damage caused by his act of negligence to the person or property of others. Liability for intent and negligence is always presumed, and the provisions of Sections 827 and 828 of the Imperial code, in the absence of other regulations, are obligatory. Negligence is defined as failure to use due precaution; non-presumption of intent is prohibited. Why should responsibility not extend to injury by fire as well as to that caused by machinery, where lack of reasonable precautions is contributory? Theatres, factories and places of public assemblage are safeguarded in a measure by statutory or other regulations, and such protection is held to be in the public interest. It is equally essential to public welfare to legislate for the safety of life from fire in all buildings. Reasonable laws, applying the same principles to fires that are enforced

against other violations of the rights of others, would curtail carelessness to a great extent and, undoubtedly, effect a considerable reduction of fire waste in Canada.

Cost of Fire Waste in Canada

Before any systematic attempt can be made to deal with fire waste in Canada, it is necessary that reliable data should be available, not only of the extent but also in regard to the distribution, nature and specific causes of the fire loss. Information of this character for the whole of the Dominion has been gathered by the Commission of Conservation in its recent survey of fire waste in Canada. The four years, 1912 to 1915, were covered by that investigation, and the principal facts ascertained were as follows:

The total fire loss in Canada during the four years 1912-1915 amounted to \$84,994,677, an average annual loss of \$21,248,660, or, per unit of population, \$2.73. In addition to this great destruction of property values, 789 persons lost their lives and no fewer than 2,103 were severely burned or otherwise injured by fire.

During the four years, cities, towns and incorporated villages in Canada suffered a total property loss of \$53,767,310, or \$3.37 per capita per annum. Townships and rural districts experienced a loss of approximately \$31,227,367, or \$2.06 per capita per annum.

The money paid by insurance companies to indemnify losses sustained amounted to approximately 89 per cent. of the total loss in cities and towns, and 63 per cent. of the loss in rural districts.

The average per capita loss in each province of the Dominion was as follows: British Columbia \$4.19, Alberta \$3.77, Saskatchewan \$3.50, New Brunswick \$3.36, Manitoba \$3.26, Ontario \$3.07, Quebec \$2.39, Nova Scotia \$2.30, and P.E.I. \$1.39.

Extent of Fires

During the years 1912-1915 loss amounting to \$51,895,831 was caused by 2,104 fires, each involving damages exceeding \$10,000. Fires other than these, numbering 34,312, caused a loss of \$33,098,846. There were also 11,741 fires in which no loss occurred. Taking mercantile and manufacturing properties only, 1,782 large fires were responsible for damage amounting to \$43,286,210, or over 50 per cent. of the total loss in Canada.

Still further analysis shows that fires in buildings in which the loss exceeded \$50,000 numbered 297, and that the property destroyed was valued at \$26,231,840, or over 30 per cent. of the total loss in Canada. Ninety-nine out of every hundred of these losses were preventable, and it is doubtful if the total damage for the whole number would have amounted to more than 5 per cent. of that reported if each building had been properly equipped with automatic sprinklers. Based upon the average cost, these properties could have been so protected for about \$1,250,000. The indirect saving to the people of Canada would have been over \$25,000,000, and the direct saving to each property owner, through the reduction of approximately 80 per cent. in insurance premiums, would have paid for the entire installation in the period of four years.

Upon the ground that the bulk of fire loss in Canada occurs in large properties, and that such properties are limited in number, the simplest method of bringing about a reduction in the fire loss is obviously to prevent fires in large properties. It is not to be expected that radical improvement can be effected immediately, but concerted action will accomplish much. Once property owners are convinced that fire protection is a paying proposition, the problem of fire waste will be on its way to solution. The point that needs re-emphasiz-

ing, therefore, is that over 60 per cent. of the total loss in Canada is caused by less than 5 per cent. of the total number of fires, and that over 30 per cent. of the loss is the result of less than 1 per cent. of the fires. Realization of that fact must form the basis of any campaign that is intended to appreciably reduce the fire loss without waste of time or effort.

Legislation Needed

The need for legislative control of fire waste in Canada is, from every point of view, too strong to be denied. Specious arguments as to the rights of property have no force. To maintain public order, experience has shown that a permanent and adequate police force is imperative. To preserve sanitation, health and purity of food and water, vigilantly administered controlling laws are essential. Fire waste is real enough, widespread enough, important enough and sufficiently controllable in the light of experience, to be regarded as a common danger that must be regulated for the common good. Existing conditions in Canada, therefore, lead to the conclusion that such legislation should be framed to deal especially with (1) standard minimum requirements, and (2) provision for adequate inspection.

Insurance Agents' Commission

The agent whose income is derived from commissions upon premiums written, naturally prefers high rates, which mean high fire hazard. On the other hand, commissions made contingent upon profits would solve many of the problems of fire waste in Canada. Further, as preliminary to a license, an insurance agent should be required to pass an examination of technical fitness before the Government granted him a license.

Your Committee, as a result of its careful study of the problem of fire waste, summarizes its conclusions as follows: That the loss by fire is primarily chargeable to:—

- (a) Carelessness, due largely from a sense of security created by the present system of fire insurance.
- (b) Faulty building construction.
- (c) Arson.
- (d) Lack of adequate fire prevention laws, such as exist being indifferently enforced.
- (e) That losses can be materially reduced, as is shown by the experience of European countries which have attacked the problem at its source.
- (f) That the only possible solution of the national fire waste problem lies in the adoption of compulsory measures which, by reducing to a minimum the fire hazards in all communities and properties, will prevent the occurrence of fires.
- (g) That the cost of fire insurance and fire prevention is, in a large measure, determined by the amount of the fire loss, and cannot be expected to decrease except as the fire waste declines.
- (h) That, owing to the failure of local authorities to deal adequately with the situation, the Provincial Governments should undertake the removal of a burden imposed upon the whole people, and should safeguard the lives and property, which, in the final analysis, constitute the true wealth of the country.

It may be expected that when the report of the "Ontario Insurance Commission" is issued, some drastic legislation will be proposed, looking to the remedy for the present alarming conditions with respect to fire waste.

All of which is respectfully submitted.

W. H. SHAPLEY,
Chairman.

H. MACDONALD,
Assistant Secretary.

The report of the Insurance Committee was presented by Mr. W. H. Shapley, its chairman.

Important Discussion Held on Fire Prevention

After reading the report Mr. Shapley said: "Our object, I presume, at this time is impressing this matter on every member that is here this morning as well as all others who may read this report, and what we believe is the right thing and what we desire done is that every member will go back to his home and make some effort to form an Association that will take the matter up and see, as far as they are concerned in their home cities, towns or villages, that something is done in order to prevent to some extent this terrible waste that is going on."

"There are a number of things that are quite simple that would affect the situation very materially, and perhaps the first thing is inspection. If we can get a regular inspection in all our places in our cities, towns and villages; if we can get our property regularly inspected by a competent man who will soon learn what is necessary, we would in that way be able to reduce the fire waste very materially without any very great expense. The important thing is for all members to go back to their home towns and be seized with the importance of this matter and endeavor to establish some sort of association that will take up and deal with the matter and concentrate on the subject."

Criminal to Allow the Waste

"It is criminal at the present time to allow this waste to continue. The amount of food stuff alone that is being burned up every year, when we are making such tremendous efforts to increase production, is a shame. This thing should not be allowed. Take for instance the number of farmers' barns alone that are being burned up every year, and one of the great causes of that is that they are not properly provided with lightning rods, and something should be done in order to either induce or compel them to put them on. It has been proven without any doubt that if lightning rods are properly installed on a farmer's barn it will not be destroyed by lightning causing fire. The Department has been watching this matter for the past thirteen years and yet every month our report shows a number of barns are being destroyed, and not a single barn among them properly provided with lightning rods."

"That is only one feature of the situation. If our members will go back to their homes and take this matter up seriously and form a little association and see what can be done I am sure that the waste will be reduced very materially. I have much pleasure in moving the adoption of the report."

MR. TINDALL (Toronto): "I have much pleasure in seconding that, and in doing so I might say, as a former member of that committee, I have given a good deal of time in past years to it, and I would like very much to compliment Mr. Shapley and his committee on the report. I think it is a very full one and a very carefully prepared, and very many of the important matters in connection with fire prevention are brought very clearly before the Association and I think it is well for every member to carefully look it over and think over and see how these things can be remedied."

The Fire Underwriters

"At the same time I would like to say—and I say what I say now very advisedly—I do not think the manufacturers of this country, the traders of this country or anyone has ever got the assistance from the Canadian Fire Underwriters Association they should have got or were entitled to get. In the evidence I gave before Judge Masten's commission I told them that in from twenty to thirty years I challenged them

to produce a single letter written by them to any manufacturer in which they pointed out to him how he could lessen his fire hazard and put themselves on record. The policy always was that when one of their inspectors came into any place they came in and went away and said nothing to the insured, either in black and white or verbally, how his risk could be bettered. It was only on the initiation of the New England Mutuals or the other Mutuals of the United States, so called unlicensed companies of the United States who depended upon inspection, that they began to take notice, and now take the credit to themselves, being themselves forced to it instead of taking the initiative as they should have done."

"I speak very strongly on this because I know something about it in past years. That things are better now no one will deny, but I think there is room for improvement and I still think we do not get from these men the assistance we should get. Those of us who have anything to do with the unlicensed companies know that we do not have to ask for an inspector; we do not have to pay for one; they send one around to our plant and he gives us a written document showing exactly in which way things are deficient and in which we can make them good if they are not good. The rate is controlled by reason of the deficiency not being made good. You have nothing of that kind from the Canadian Fire Underwriters. I have never seen it or heard of it."

"Another thing that I do think we in this country have got to get legislation with regard to, is this, we should have control of our workmen smoking in our factories. In the plant with which I am immediately connected we tried everything to stop our men smoking in the plant, and yet surreptitiously and in all sorts of underhanded ways we occasionally come across a man smoking. We have no machinery by which we could make that a criminal offence. My opinion is that any man caught smoking in a factory or an industry of any kind that is susceptible to fire through inflammable material, should be dealt with very strongly and that the penalty should be made so great that the offence would not be committed again."

The Smoking Hazard

"A short time ago we came across one man smoking and I thought I would try to see if there was any remedy and I found there was none and I had to back down, although we had our notices up. When I came to look into the law and take it up with the authorities I found I could not prosecute criminally. The other day in Toronto I was in one of our public frame buildings and there was a young man came out of the elevator a few steps before me and he had a box of matches in one hand and a cigarette in the other and during the length of that hall that man lighted three matches and threw the lighted match on the wooden floor and went out the door without any attempt to see whether the match went out or not, and it was just as likely as not if there had been a wide crack that one of those matches might have gone down and smouldered there for three or four hours and then broken out in flames in the building. I say any man doing such a thing as that should be liable to criminal prosecution."

MR. COX (Winnipeg): "Mr. Chairman, I would like to relate for the benefit of the assembly a rather pleasant incident in Winnipeg along the lines of this report and I think it will be of interest to this meeting. We recently have had a very disagreeable strike and among other things, I am told that our fire brigade went out on strike. That left Winnipeg in a very perilous condition. However, a committee of citizens was formed and the situation was grappled with. We

manned the fire halls in something like twenty-four hours. We were bothered the first night with an enormous number of false alarms. We overcame that situation by the voluntary effort of our citizens. We called for two hundred and got five hundred and we put out 206. We had one alarm the following night. After that we had no others. After that volunteer brigade was in the halls we had one small fire which was promptly extinguished by that brigade, with very small loss. After that we had no fires whatever. I am telling you this as an instance of what you can do with the people if you appeal to them properly. We appealed to our citizens to be careful and to take care of everything in the nature of fire, and they did it. I might say the 24th of May was included in that period, so that you may know it was a most perilous time, and yet during that period we had no fires. That is a specimen of what people will do if they want to."

The Sprinkler System

MR. BAIN (Woodstock): "For some years we carried our insurance with the Canadian companies and our feeling at that time was they were not so anxious about us having a splendid risk as they were in getting the rates. For some years we have been insured in the Union Mutual and we have spent a lot of money in putting in equipment, and my feeling with them is and always has been that their endeavor was to help us prevent fires; they were not looking for rates at all; and while we have spent \$35,000 in equipment it is the best spent money in our business.

"When Mr. Shapley was reading the report there was one thing which occurred to me in regard to the sprinkler system. I was surprised a year ago when the chief of our Fire Department told me that they had the sprinkler system up for discussion at their annual convention and I think he said about half of the chiefs of the fire departments of the different towns and cities in attendance didn't know before anything about the sprinkling system. I could hardly credit it. If it is so, it ought not to be so. I think every chief ought to know something about the sprinkler system and I think every chief ought to use his endeavor to have everybody they possibly can adopt the sprinkler system."

MR. CAMERON (Toronto): "I am glad to rise to say that I think this paper or report which has been presented is a very valuable one for every member of this Association and every one in Canada who has property to insure and everyone in Canada who has the interests of Canada at heart.

Prevention the Right Way

"In reading the general report mention was made of the great debt it has been estimated that we are going to bear after the war is over and how are we going to meet it, and here is one definite practical way in which a large portion of the carrying debt can be overcome, because there isn't any excuse for waste, and to-day more attention is being paid to prevention than to cure. The prevention of disease is the watchword to-day rather than the cure, because we know that which is prevented does not require to be cured. A fire which is prevented does not require to be put out. In the past our energies, municipal and otherwise, have been towards the question of putting out fires rather than their prevention and it was the wrong end. Prevention is the right way.

"Inspection, to my mind, is one great feature that will help to solve this problem—proper inspection, adequate inspection, inspection that looks to the absolute prevention of fire and not to the making of money out of the premiums and not the fixing of the rates. The inspector appointed by the underwriters simply inspects so that he may give his report as to what rate should be placed upon each particular property or risk. That is the wrong way. We want inspection

that will tend to prevent fire waste and the inspection should be such that my property should not be endangered by the property next door to me. In local circles if there is a contagious disease we don't think there is anything wrong if we go out and shout to the housetops if the inspection is not proper and fully and entirely protecting us. But still my neighbor may sit right beside me with the most dangerous and carelessly conducted plant, endangering me all the time and, because of being nice and gentlemanly, I go on and suffer; I am afraid to speak. The time has come when we must insist that not only our own premises but our neighbor's premises shall not be a menace to us, and in that way we will produce the conditions we are after. This can be done; it is not a tremendous problem; it requires business application to prevent. I think fifty per cent. and I believe seventy-five to ninety per cent. of the fires can be prevented. In my own experience in business I have only had one small fire, but I have never had the experience of a fire yet that was not through carelessness, smoking or otherwise."

MR. WHITE (London) "In reading these valuable reports I don't think they should be railroaded through without an opportunity for discussion. I think this is the most valuable one I have ever heard read before a convention, and I wish to compliment the Insurance Committee on their report. My object in rising was merely to point out one or two facts; one of them is that we should welcome inspection. I have inspectors through our plants at different times a great many of them state that there are a great number of manufacturers who do not welcome inspection; they try to hide things from the inspectors. The inspectors make a report and instead of complying with their request they do their best to get out of it. The point is that we should welcome inspection from every point of view and make the inspectors feel at home and feel like coming again, and pointing out everything that will prevent fire.

A Place for Smoking

"Then on the question of smoking. I have had the same difficulty through the factory. People who are accustomed to smoking want to smoke. Now, you can't bind men not to smoke. You can put all the signs in the factory you wish, you can make all the drastic rules you wish, but you can't prevent it. There is just one way to meet the situation. The men will smoke after lunch, if they bring their lunches. Provide a proper place for them to smoke. All the men here who smoke want to smoke after lunch; they can do better work after they have a smoke and so can your workmen. I feel very strongly that instead of making drastic rules to curtail men in their smoking and other privileges, that we should provide a proper place not only for them to have their lunches but for them to have a smoke after lunch."

The President then put the motion to adopt the report of the Insurance Committee which, on a vote having been taken, was declared carried.

The "War Mohawk," the first standard wooden vessel built in Eastern Canada for the I.M.B., was launched on May 11th. It was built of British Columbia timber, 1,500,000 feet of fir being brought from British Columbia for the construction of this boat.

Peterborough manufacturers have recently organized a manufacturers' section of the local board of trade. Mr. W. R. Breyfogle, De Laval Company, is chairman, and Mr. J. J. Turner, of J. J. Turner & Sons, secretary. At the organization meeting practically every manufacturing concern in the city was represented.

TARIFF

Annual Report of the Tariff Committee

YOUR Tariff Committee, during the past year, has dealt with many trade problems arising out of the war, constantly changing regulations governing foreign trade, and obstacles which had the effect of retarding industry, in addition to the usual routine work. The tariff changes enacted by Parliament this year were designed wholly to meet revenue requirements, owing to the enormously increased Government expenditure on the war. This policy has been adhered to by Parliament since the outbreak of war; and has received endorsement in the recent general election. Your Committee believes that no other action is practicable in the country's general interests, whilst the war continues.

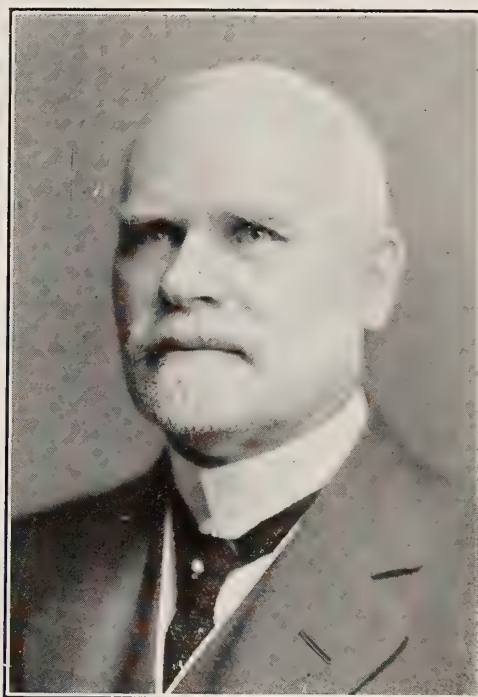
War Trade Embargoes

The mobilization work of the United States commands our highest admiration; but the very efficiency and nation-wide scope of this concentration on the one object of hastening the successful ending of the war, has created temporarily critical conditions for this country, as in the case of war trade embargoes, which prohibit the exportation to Canada of various basic materials indispensable to essential industries. Canadian industry has been built up in close relation with the growth of United States industry; we draw necessary materials from adjacent United States territory, just as an industry in one State draws materials from another State or from Canada. Now, however, a United States manufacturer is using materials which a Canadian manufacturer cannot obtain; and, in other cases, a United States manufacturer is buying his basic materials at lower prices than the same materials, which are equally essential to his work, can be purchased in the United States by the Canadian manufacturer. Since the United States still allows the product of such a manufactory, representing completely finished articles as sold to the ultimate user, to be exported to Canada, the manufacturers of that country are able to offer lower prices here than our manufacturers can meet. This works to create unfair domination of this market. In this, the fourth year of the Dominion's war work, this new attitude on the part of the United States, which cripples our industries, must result either from lack of understanding of conditions in Canada, or from oversight. We are confident that this unexpected development is capable of immediate relief, without impeding the efforts of the United States in its concentration on war work. The United States would be treating the Dominion of Canada no better than they treated it throughout the first three years of this war, when they were a neutral nation, if they would arrange to admit Canadian manufacturers to their sources of supply under the conditions which they apply to their own manufacturers. There can be no doubt that the United States is receiving freely from Canada numerous necessary materials, and that this country is solicitous for complete co-operation with the United States in war work; and now that both countries, actuated by the same high ideals and purpose, and governed by similar laws and regulations, are united in a life and death struggle against the common enemy, there should be a pooling of resources and unity in war work, instead of crippling trade embargoes. If Canadian industries were permitted to obtain indispensable materials in the United States on the same terms as govern their use by corresponding United States manufacturers, this policy could not fail to produce better effort in the war work of North America. Full control of such equitable arrangements

could be assured under regulations of the Canada War Trade Board.

If these conditions cannot be brought about by more direct methods, we believe the arrangements ought to be negotiated at once by the two governments. Unless this is done, our own Government will find it necessary to arrange with the British authorities for shipping space to carry materials direct, which heretofore have been shipped into the United States and thence into Canada; and to provide conditions whereby we may ourselves produce the other indispensable materials which now are only obtainable in the United States.

These and other adverse conditions arising from the war, and new ones which will continue to arise, make it necessary



—B. and C. Press Photo

Hon. E. J. Davis

Davis Leather Co., Limited, Newmarket
Chairman, Tariff Committee, 1917-18

that thorough and permanent organization and co-operation should be completed in respect to each group of manufacturers affected by the conditions referred to.

Remission of Duty on Manufactured Articles

Within the year our Government has remitted duties on importations of various manufactured articles used by the ultimate consumer, whilst leaving duties in force against materials which must be imported for the successful manufacture in Canada of such finished products. Legislation of this kind represents the antithesis of protection; it stifles domestic industry whilst stimulating and encouraging the importation of foreign manufactures. Your Tariff Committee believes every business man must consider such legislation to be hasty legislation and contrary to the interests of our own country. And we have taken the position that before considering the remission of duties on manufactured products the Government should, in all cases, make a thorough survey

of the domestic situation, consult with the manufacturers in Canada producing the class of goods under question, and afterwards, if determined to remit the duties, that the same Order-in-Council should remit the duties on commodities which must be imported for the manufacture in Canada of similar finished products. Even remission of duties on materials does not give Canadian industries equality in competition against importations of the foreign manufactured article. A striking example of this is the farm tractor. If a Canadian manufacturer of farm tractors goes to the United States for his materials he must pay higher prices for iron and steel than his United States competitor who can lay down his finished tractor in Canada free of duty, vide letter from the United States War Trade Board, as follows:—

"Replying to your letter of October 13th, in which you ask whether the prices agreed upon for steel products were to be made to the United States public and the Allied Governments as well as the United States Government, and whether or not these prices include private business in Canada.

"Your question really is in regard to the last point and the agreement on prices was not intended to cover the business of private individuals outside of the United States.

"In other words, the agreement covers prices only on United States' Government orders, Allied Government orders and the United States public."

Your Committee has urged in respect to such cases that the Government of Canada provide terms of equality to its own domestic industries.

Exchange

The effect of Government encouragement to greater imports of finished products from the United States seems to have been overlooked or disregarded. It increases the difficulty of the exchange situation resulting from the fact that the balance of our trade with the United States is heavily against Canada. Such official trade returns as are available show the adverse trade balance against Canada to be as follows:—

Year ending March 31st.	Exports to United States.	Imports from United States.
1914	\$200,459,373	\$410,786,091
1915	215,409,326	428,616,927
1916	320,225,080	398,693,720
1917	486,870,690	677,631,616
1918	434,036,552	802,671,461

Although our total or world exports show a substantial trade balance in our favor, war conditions prevent that favorable balance from being used to offset our adverse trade balance with the United States. Thus, the great excess in value of our imports places Canadian funds at a discount in the United States, and United States funds at a premium in Canada. This discount Canadian business men have to lose; and it represents a loss running into millions of dollars.

Export Trade

One of the most extraordinary developments of the war is the complete reversal of the total trade balance of this Dominion. Before the war, our imports greatly exceeded our exports. Now our total exports greatly exceed our imports. The following table shows the relative position of exports and imports for the year ending March 31st, 1914:—

Total Imports	\$633,692,449
Total Exports	478,997,928

Excess of Imports over Exports .. \$154,694,521 or 32 per cent.

The next table shows the gratifying change which had taken place by the year ending March 31st, 1918:—

Total Exports	\$1,589,661,195
Total Imports	974,801,020

Excess of Exports over Imports... \$614,860,165 or 63 per cent.

The third table is of special interest to manufacturers:

Total Exports of manufactured goods, 1918....	\$636,602,000
Total Exports of manufactured goods, 1914....	57,443,000

Increase \$579,159,000
or 1082 per cent.

Can we after the war maintain the advantage we have gained in the world's markets; and can we increase this surplus export trade?

The Department of Trade and Commerce is fully aware of these problems, and doubtless is making plans for future effort. In this connection we look to our Government to furnish powerful assistance to the consummation of such special customs legislation with other countries as will result in strengthening and consolidating the British Empire, and at the same time assist in speeding up our total or world exports. We also look to our Government to exert every effort to ensure the general adoption throughout the British Dominions of substantial customs preferences to Empire products, corresponding to the customs preferences which are offered to Empire products under the tariff of Canada. This is a policy which is consistently pursued by every great producing nation except the British Empire. Another important consideration is the customs drawback regulation which should ensure the equivalent of duty free materials for manufacturing for export. If there were no manufacturing for export there would be no imports for that purpose, and no payment of duties; and, therefore, in respect to duties on materials imported to be manufactured and exported the Government loses no revenue by granting the drawback on proof of exportation. Recent amendments to the customs drawback regulations provide reasonable facility for export trade in certain rubber manufactures and iron foundry products of Canadian manufacture. In order to enable manufacturers of other products to co-operate with the Government's policy of expanding export trade, it will be absolutely necessary for the Government to apply the same amended regulations to the remaining exporting industries.

French Treaty Rates of Canada

Both France and Italy have taken action toward terminating existing trade treaties so as to leave the ground clear for the complete reconstruction of customs relations after the war. This action is in full harmony with the resolutions of the Paris Economic Conference. In the usual course, these treaty rates will cease to be effective about one year hence. We understand the commercial treaty with France will terminate about May 15th, 1919.

Customs Tariff Changes, Orders-in-Council and Rulings

The Tariff Department has reported the particulars of the tariff changes, Orders-in-Council, and customs rulings which will be found in Appendix "A," all of which have received the consideration of your Committee. Members of the Association who were affected by these tariff ratings were written to, and in addition full announcements thereof were made in INDUSTRIAL CANADA.

Special Tariff Information

Your Committee has complete files on the Tariffs and Customs Regulations of each British Colony and foreign country; and information on these subjects can be secured at

any time from the Association's Tariff Department by members who are engaged in foreign trade or who purpose engaging in foreign trade.

Drawbacks and Refunds

The Tariff Department of the Association can furnish members interested with full particulars regarding the Customs Drawback Regulations and Refunds.

The services of the Manager of the Tariff Department of the Association are wholly at the disposal of any member



J. K. R. Bristol
Manager, Tariff Department, Canadian
Manufacturers Association

who may need assistance in any customs matter or information and help in regard to foreign trade restrictions.

All of which is respectfully submitted.

E. J. DAVIS,
Chairman.

J. K. R. BRISTOL,
Manager Tariff Department.

APPENDIX "A"

Tariff Changes, 1918.

The following are the provisions of an Act to amend the customs tariff, 1907, in force 1st May, 1918:—

An Act to Amend the Customs Tariff, 1907

Passed May, 1918.

His Majesty, by and with the advice and consent of the Senate and House of Commons of Canada enacts as follows:

1. This Act may be cited as *The Customs Tariff Amendment Act, 1918*.

2. Schedule A of *The Customs Tariff, 1907*, as amended by chapter five of the Acts of 1914, second session, and by chapter three of the Acts of 1915, is amended by striking out tariff items 24, 25, 25a, 26, 27, 28, 28a, 29, 29a, 143, 144, 145, the

several enumerations of goods respectively and the several rates of duties of Customs, if any, set opposite each of the said items, and by providing that the following items, enumerations and rates of duties be inserted in said Schedule A:—

Tariff Items.		British Preferential Tariff.	Intermediate Tariff.	General Tariff.
24	Chicory, raw or green, per pound	5 cents.	7 cents.	7 cents.
25	Chicory, kiln-dried, roasted or groundper pound	8 cents.	10 cents.	10 cents.
25a	Coffee, extract of, n.o.p., and substitutes thereof of all kindsper pound	9 cents.	12 cents.	12 cents.
26	Coffee, roasted or ground, and all imitations thereof and substitutes therefor, including acorn nuts, n.o.p.per pound	8 cents.	10 cents.	10 cents.
27	Coffee, roasted or ground, when not imported direct from the country of growth and productionper pound	8 cents. & 7½ p.c.	10 cents. 10 p.c.	10 cents. 10 p.c.
28	Coffee, green, imported direct from the country of growth and production, and green coffee purchased in bond in the United Kingdom, per pound	5 cents.	7 cents.	7 cents.
28a	Tea imported direct from the country of growth and production, and tea purchased in bond in the United Kingdomper pound	10 cents.	10 cents.	10 cents.
	When in wrappings, cartons or other packages weighing five pounds or less, the weight of the wrappings, cartons or other packages to be included in the weight for duty.			
29	Coffee, green, n.o.p.per pound	5 cents. & 7½ p.c.	7 cents. 10 p.c.	7 cents. 10 p.c.
29a	Tea, n.o.p.per pound	10 cents. & 10 p.c.	10 cents. 10 p.c.	10 cents. 10 p.c.
	When in wrappings, cartons or other packages weighing five pounds or less, the weight of the wrappings, cartons or other packages to be included in the weight for duty.			
143	Cigars and Cigarettes, the weight of cigars to include bands and ribbons, and the weight of cigarettes to include the paper coveringper pound	\$ 4 10 & 25 p.c.	\$ 4 10 25 p.c.	\$ 4 10 25 p.c.
144	Cut tobaccoper pound	95 cents.	95 cents.	95 cents.
145	Manufactured tobacco, n.o.p. and snuffper pound	90 cents.	90 cents.	90 cents.
147a	Beverages in the manufacture of which malt, rice or corn is used, when containing not more than two and one-half per centum of proof spirit.	25 p.c.	40 p.c.	40 p.c.
657a	Cinematograph or moving picture films, positives, one and one-eighth of an inch in width and over.per linear foot	2 cents.	3 cents.	3 cents.

Provided, however, that the goods hereinbefore enumerated shall be exempt from the rates of duties of Customs specified in section three of *The Customs Tariff War Revenue Act, 1915*.

3. This Act shall be deemed to have come into force on the first day of May, one thousand nine hundred and eighteen, and to have applied to all goods mentioned in the preceding section, imported or taken out of warehouse for consumption on and after that day, and to have also applied to goods previously imported for which no entry for consumption was made before that day.

INSTRUCTIONS.

The undermentioned goods being subject to a War Excise Tax equal to ten per cent. of their duty paid value when imported or entered at Customs on and after May 1st, 1918, Collectors of Customs are instructed to collect this tax and account for same on Inland Revenue Entry Form 54 in duplicate, signed by the Customs Officer, separate from Customs Duty Entries. The War Excise Entries are to be forwarded from outports to chief ports and one copy from chief ports to the

Department of Customs, along with Customs Entries but in separate bundles.

The War Excise Tax is to be deposited to the credit of the Receiver General, and separate bank deposits receipts, with draft, obtained therefor, marked as for "War Excise Tax" and to be forwarded to the Customs Department along with the entries which they cover.

The said goods, subject to 10 p.c. War Excise Tax on their *duty paid value*, being as follows:—

Automobiles,
Gramophones,
Graphophones,
Phonographs,
Talking Machines,
Cylinders and records therefor,
Mechanical Piano and Organ Players,
and records therefor,

Articles commonly or commercially known as jewelry, whether real or imitation, for adornment of the person.

NOTE.—Under decision of the Board of Customs, the term "Jewelry" for War Excise Tax purposes is to be held as applying only to jewelry as described in item 647 of the Customs Tariff, and not to include unset diamonds or industrial diamonds.

Second hand automobiles, when admitted free as settlers' effects, are to be held as exempt from War Excise Tax.

Orders-in-Council

Order-in-Council of 19th April, 1918, respecting drawback of Customs duties on ships' materials payable to the manufacturer of articles made from imported materials:

REGULATIONS.

The drawback of ninety-nine per cent. of the Customs duty allowed on imported materials used in the original construction of ships and vessels built in Canada since 1st November, 1916, may, with the consent of the builder of the vessel, be paid to the manufacturer of articles made in Canada from imported materials and used in such original construction of the vessel, subject to the same conditions and restrictions as when the drawback is paid to the builder of the vessel, and also subject to such further regulations as the Minister of Customs deems necessary to establish the bona fides of the claim.

Instructions in regard to drawback payable to manufacturer of ships' materials, viz.:—

(a) The quantity of materials used and the amount of duty paid thereon shall be ascertained.

(b) Evidence satisfactory to the Minister of Customs in respect of the manufacture or production of the articles in which the imported materials are claimed to have been used shall be furnished.

(c) The claim for drawback shall be verified under oath before a Collector of Customs or Justice of the Peace, on drawback claim form for Home Consumption (K15½) or in such other form as the Minister of Customs shall prescribe.

(d) The following forms are approved for the purposes therein specified:

STATEMENT OF IMPORTED MATERIALS.

Sold by of
To of
For use in the manufacture of

Date of Sale.	Quantity and Description of Goods.	Sale Price Per Unit.	No. of Entry, Date of Entry and Port of Entry.

Importer's Signature.

QUANTITY OF ABOVE MATERIALS USED IN THE MANUFACTURE OF ARTICLES FOR HOME CONSUMPTION.

Period during which the materials were used in the articles manufactured.	Description and Quantity of the Articles Manufactured	Materials Used in the Articles Manufactured.	
		Quantity.	Price per Unit.

Manufacturer's Signature.

(e) There shall be attached to the drawback claim a declaration signed by the builder of the vessel in which the manufactured articles have been used, to the following effect, viz.:—

I, of do hereby declare that the articles hereinafter described, purchased by me from , to whom drawback thereon is payable, have been used in the original construction of the new vessel named launched at on the , 19 .. , viz.:—

Description of Articles.	Quantity.	Value.

Dated at 19 ..

..... (Signature)

Change in Basis of Valuation for Duty

The statute has hitherto required imported goods to be appraised at the fair market value in the country of export at time of shipment. This basis of appraisement was altered by an Order-in-Council, effective on and after July 4th, 1917, as follows:—

"During the period of the war, until otherwise ordered, Customs duties on imported goods subject to an ad valorem rate may be accepted by Collectors of Customs in Canada at fair market value of the goods at the time of purchase in the country when exported directly to Canada, with an addition to such value of not more than twenty-five per centum when imported within nine months from the date on which such goods have been contracted for or ordered to be shipped to Canada, notwithstanding any greater advance in the value of the goods prior to their exportation to Canada."

Further Order-in-Council, dated October 4th, 1917.

"His Excellency the Governor-General in Council is pleased to order that the Order-in-Council of the 4th of July, 1917, respecting the valuation of goods for duty purposes, shall be and the same is hereby amended by adding the following provision thereto, viz.:—

"Provided that in respect of rolled iron or steel, galvanized or not, ordered by the importer on specification within nine months from the date of contract, and imported since the 4th July, 1917, within nine months from the time specified for exportation, duty may be accepted on the fair market value

of the goods at the date of contract, with an addition to such value of not more than twenty-five per centum."

Oleomargarine and Other Substitutes for Butter

Order-in-Council, dated October 26th, 1917.

"On and after the 1st November, 1917, until otherwise ordered, oleomargarine, margarine, butterine and other substitutes for butter, as defined in the Regulations by Order-in-Council hereinafter set forth, may be imported into Canada without ordinary Customs duty or war tax. Provided that the importer shall have first obtained a license from the Food Controller of Canada (resident in Ottawa).

Tractors

Order-in-Council, dated February 7th, 1918.

"During the period of one year from the seventh day of February, 1918, remission and refund of duty is hereby authorized in respect of traction engines costing not more than One Thousand Four Hundred Dollars in the country of production, designed to be moved by steam or other motive power for farm purposes, and parts thereof for repair; and traction attachments designed and imported to be combined with automobiles in Canada for use as traction engines for farm purposes, and parts thereof for repair."

Settlers' Effects

By Order-in-Council, dated February 8th, 1918, the regulation for free entry of settlers' effects was extended to include vehicles and implements moved by mechanical power, if actually owned abroad by the settler for at least six months before his removal to Canada. This privilege, under the Order-in-Council, applies throughout the period of the war.

Farmers' Outfits

(1) In order to meet the urgency for increased production of food, the Commissioner of Customs instructed Collectors that during the present year free entry may be allowed of teams, vehicles, implements and other outfits which have been in use abroad for farming purposes, conditional on exportation prior to December 31st, 1918, and subject to the following conditions:

- (a) Articles above described shall be duly reported inwards at the Customs Frontier Port, with such description and valuation as will enable the Customs Officer to identify them on leaving the Dominion.
- (b) The owner of the farming outfit shall give an undertaking to the satisfaction of the Collector that the outfit for which temporary admission is applied, is to be used in good faith for farming purposes, and will be exported in due course on or before 31st December, 1918.
- (c) He will also require to furnish a guarantee for payment of Customs duty, in default of the due exportation of the outfit.

(2) During the period specified for the return of the outfit, the owner may enter same free of duty as settlers' effects, upon the usual declaration, if, in the meantime, he has taken up land and becomes a bona fide settler in Canada.

(3) The guarantee shall be signed by the owner of the outfit, and by one freeholder resident in Canada, and shall remain on file with the Customs Officer at the port of entry.

Tractors

Order-in-Council, dated the 26th day of March, 1918,

authorizes remission of duty on imported commodities used in Canada in the manufacture of tractors, viz.:

His Excellency the Governor-General in Council, on the recommendation of the Acting Minister of Finance, and under

the provisions of section 286 of the Customs Act, is pleased to make the following regulations, respecting drawback of Customs duty on imported goods used between the thirtieth day of November, one thousand nine hundred and seventeen, and the eighth day of February, one thousand nine hundred and nineteen, in the manufacture of gas or gasoline traction engines for farm purposes and repairs therefor, and the said regulations are hereby made and established accordingly:—

REGULATIONS

1. When imported materials, on which Customs duties have been paid, are used between the 30th day of November, 1917, and the 8th day of February, 1919, in the manufacture of gas and gasoline traction engines for farm purposes and repairs therefor, there may be paid a drawback of ninety-nine per centum of the duties paid on the materials so used.

2. The said drawback may be paid to the manufacturer of the gas or gasoline traction engines and repairs therefor, costing not more than fourteen hundred dollars, subject to the following conditions, viz.:

- (a) The quantity of materials used and the amount of duties paid therefor shall be ascertained;
- (b) Satisfactory evidence shall be furnished in respect to the manufacture in Canada of the gas or gasoline traction engines and repairs therefor.

3. The claim for drawback shall be verified under oath before a Collector of Customs to the satisfaction of the Minister of Customs, in such form as he shall prescribe, within one year after the manufacture of the gas or gasoline traction engines and repairs therefor. The Minister may also require in any case the production of such further evidence, in addition to the usual averments, as he deems necessary to establish the bona fides of the claim.

Board of Customs' Decisions

Hard soap (not being whale oil soap or castile soap), when the fair market value thereof at the place of manufacture abroad is over 9 cents per pound wholesale, is ruled to be dutiable at 32½ per cent. general tariff, plus the war tariff, under tariff item 228. Hard soap valued up to 9 cents per pound is dutiable under tariff item 229, at 1 cent per pound, plus the war tariff.

Staves or stave materials of wood, other than oak or poplar, listed or jointed, and improved in condition, but not bevelled at the ends, declared to be dutiable under tariff item 711. Under this tariff item the general tariff rate is 17½ per cent. The item is also subject to the war tariff.

Fern leaves, per sample, not dyed or further prepared than dried, declared to be dutiable under tariff item 711.

Gold plate scrap, per sample, declared to be dutiable under tariff item 711.

Alloys of gold in ingots, blocks, bars, drops, sheets, or plates, unmanufactured, when not less than 10 kt. fine, ruled free of duty under tariff item 359; and when below 10 kt. fine ruled to be dutiable under tariff item 711.

Johnson's Carbon Remover, or Liquid Decarbonizer, ruled to be dutiable under tariff item 220-B, and exempt from the war tariff. Under this tariff item the rate of duty payable is 60 per cent. ad valorem.

Phosphate rock, ground, but not further treated, ruled to be free of regular duty under tariff item 662. This item is also exempt from the war tariff.

Electrically welded steel tubing, per sample, costing 7 cents or over per pound, ruled to be entitled to entry under tariff item 396. Under this tariff item the rate of duty payable under the general tariff is 5 per cent. plus the war tariff of 7½ per cent. ad valorem.

Hub blocks of wood, per sample, rough turned, with hole in centre, but not shaped, declared to be free of duty under tariff item 502. This item, however, is subject to the war tariff. Other hub blocks, per samples, turned to shape, are declared to be dutiable under tariff item 506. Under this

latter item the general tariff rate is 25 per cent plus the war tariff.

Sheepskin robe, lined and made in form of pouch or sleeping bag, declared to be dutiable under tariff item 625. Under this item the general tariff rate is 30 per cent. plus the war tariff.

Se-Ment-01, Skalex and Thermite, manufactured by the Northwestern Chemical Company, Marietta, Ohio, declared to be dutiable under tariff item 220, as being proprietary preparations.

Johnson's Prepared Wax (paste) and Johnson's Prepared Wax (liquid) declared to be dutiable under tariff item 252. Under this item the general tariff rate is 27½ per cent. plus the war tariff.

Customs Rulings

Compart boards, per sample, dutiable under item 468.

Certain loom harness, per samples, dutiable under item 468.

Newfoundland cod oil, free of any duty under section 8 of the Tariff Act.

Ferro chrome, per sample, dutiable under item 375.

Hat braids, per samples, ruled free of duty under tariff item 641.

Dental cement powder or compound, in bulk, ruled to be dutiable under tariff item 711 at 17½ per cent. plus the war tariff of 7½ per cent.

Liquid (acid), per sample, for use with dental cement, ruled to be dutiable under item 216 at 22½ per cent. plus the war tariff.

Albasol leather oil, ruled to be dutiable under item 711 at 17½ per cent. plus the war tariff.

Ruling that imported materials shipped to Canada on consignment to be manufactured into articles for shipbuilding and returned to the United States, may be entered at Customs as for warehouse, and be further manufactured conditional on exportation of the product to the United States upon payment of 1 per cent of the Customs duties, based on the values of the materials imported. The scrap would either have to be exported, if of any value, or scrap duty paid thereon. The Customs supervision would be at the expense of the Customs Department of Canada.

Ruling of the United States Treasury Department that the Army Appropriation Act of May 12th, 1917, specified that articles purchased thereunder by the War Department may be admitted to entry free of duty. Only such articles are admitted to free entry as are paid for by such appropriation, and so certified by the Secretary of War to this Department with a request for their free entry.

Ruling that in respect to the United States so-called War Excise Tax on automobiles, musical instruments, etc.:

This tax is an export tax if charged to the importer in Canada, and forms part of the true invoice value which is dutiable under sub-section 43 of the Customs Act. This means that 7½ per cent. Customs war tax of Canada will be demanded to be paid by the Canadian Customs on such importations.

Black and galvanized clinch rings are ruled not to be entitled to free entry under tariff item 470.

Emery in form of very fine powder, obtained by grading in water by flotation process, ruled to be free of duty under tariff item 669, in effect on and after 9th November, 1917. This item, however, is subject to the war tariff.

American Gentlemen, a monthly trade journal, accompanied each month by one or two fashion plates in single copies in sheet form, ruled to be dutiable under tariff item 184. Under this item the general tariff rate is 22½ per cent. plus the war tariff of 7½ per cent.

Brass-Kote, Never-Burn, and Tire-Lac, manufactured by the Northwestern Chemical Company, Marietta, Ohio, ruled to be dutiable under tariff item 247. Under this tariff item

the general rate is 30 per cent. plus the war tariff of 7½ per cent.

Canned or cooked corn is ruled to be subject to the war tax. The only articles in tariff item 86 which are exempt from the war tax are those enumerated in Schedule "C" of the French Treaty; and canned or cooked corn is not so enumerated.

The report of the Tariff Committee was presented and outlined by Hon. E. J. Davis, chairman of the committee, who moved, seconded by Mr. Taylor, that it be adopted.

The Farm Tractor Problem

MR. WHITE (London): "With reference to the clause referring to farm tractors and the application of it to our own industry, I may say previous to the Order-in-Council of February 7th, we were installing a factory and equipping a factory we have already for the manufacture of tractors, and we had purchased considerable raw material. When this Order-in-Council came out we looked into the matter and we found that, while we had procured the material in Canada and paid Canadian prices for a large amount of that material (some small amount we purchased from the United States), we were paying a higher price than the United States manufacturers had to pay, and we found the condition was this, that we could buy tractors in the United States, the finished articles, and bring them in to fill our orders here at a great deal lower rate than we could manufacture them out of the material we had already purchased, and we proceeded to do so. Our materials are lying there. We immediately ceased operations for the equipment and installation of the plant for the manufacture of tractors. We have no assurance from the Government that this will cease on February 7th next, nor can we get any such assurance anywhere. In fact the tractor industry of Canada is out at the present time and we cannot carry on under the present conditions.

"The purchase of a thousand tractors in Detroit, at cost, as the Government states, and selling them at cost in competition with legitimate industries in Canada is a peculiar way in our view to meet or assist in meeting the balance of trade, and to make exchange come down to par. In fact it has, to a great extent, been instrumental in advancing the exchange rates on New York and Chicago. Anything that can be done by this Association, any influence that can be brought to bear to assist in this matter will help an industry that will be in the future one of the large industries of Canada. But just so long as we can get no assurance from the Government that we will be protected in a way that we can purchase our raw material at the same price as the United States manufacturers can purchase it and be protected to an extent that will enable us to manufacture and compete with the large specialized industries in the United States, then the tractor manufacturers will have to quit business.

A serious Situation

"It is a serious situation and one we don't know just how to meet. I don't know that the Association can help us, but no doubt the tone of your address and the tone of this report reaching the authorities will have some effect, and I hope that it will do so. Further than that the intermediate manufacturers will be greatly affected. We are the last in a long line between the original raw material and the final consumers. We are the final manufacturers of tractors; all the intermediate manufacturers or industries will be affected; if this continues another year and we obtain our raw materials from the United States, which we will have to do to get the refund of the duty, it means that this large industry, and it

will be a large industry because it has come to stay, will have to purchase all its raw material in the United States. This not only affects the tractor manufacturers but every manufacturer from the original raw material to the final consumer, to the farmer."

THE PRESIDENT: "Gentlemen, many of you know that a very strong delegation waited upon the Government in connection with this tractor matter and representations are being made right along to them. The Association is not asleep in this matter. Mr. White, unfortunately, was not I think a member of that first delegation. No doubt the incoming Executive will make it one of the first items of business to take up that matter again with the Government and try to get them to arrive at a favorable decision so that the tractor manufacturers will know where they are."

Question of Raw Materials

MR. DOUGLAS (Hamilton): "Another matter it seems to me that should be pressed upon the Government in connection with this—(these matters are a little delicate owing to the condition of the country being at war and members of the Association have hesitancy in pressing these matters upon the Government)—the question of raw materials—is a very serious matter. The prices of many products have been fixed in the United States at a price that it is impossible for the Canadian manufacturer to compete with when he has to pay the price of the raw material which he must purchase in his own market because he cannot get it in the United States. If he could, he could not buy those raw materials at the prevailing prices which the manufacturers of that country are paying. It is a question how far these matters should be urged, but it is a great hardship upon the manufacturers. Only the other day I heard where the Government themselves called for the manufacture of some pipe. They are buying pig iron at \$33 in the United States; they are asking \$50. It is impossible for the producer in this country to pay \$50 in competition with \$33 and meet the competition of the United States pipe manufacturers. Those conditions are very onerous on the Canadian manufacturers at the present time."

THE PRESIDENT: "Mr. Douglas is quite correct in his statement and what he has said opens up a very large question, too large perhaps to deal with at the present moment, although extremely important. I am sure the Association will do all they can to remedy the matter."

The President then put the motion to adopt the report of the Tariff Committee, which, on a vote having been taken, was declared carried.

Car Ferries Are Needed

Victoria Board of Trade is Advised of the Serious Need of Transportation Facilities on the Coast

That Victoria wharf facilities need immediate extension and that an adequate car ferry service to the mainland is needed are points brought out in a report submitted recently to the council of the Victoria Board of Trade by the Harbors and Navigation Committee. The report refers to the recent visit of Mr. A. R. Dufresne, assistant chief engineer of the Department of Public Works, and says:

"We called his attention to the large quantity of Oriental merchandise landed at this port at the present time, mostly from Japanese steamers. That these vessels are destined for Puget Sound and that this is the only port of call in British Columbia and that in consequence of the time incurred and expense involved that it is the most economical course in handling the Canadian freight.

"We informed him that the tonnage referred to from the middle of September, 1917, to the end of February, 1918, was 13,180 weight or measurement tons moved by the Canadian Pacific Railway Company to Vancouver. Also, 5,708 tons for furtherance overland, making a grand total of 18,888 tons during that period. Some cargo, such as rice, was offered for transference at the Outer Wharves, but as the facilities were not adequate for handling it, it went on to Seattle and was there transferred, presumably by rail.

"The car transfer slip is now finished, and if we had a suitable shed on the new pier, with railway tracks extended to it, this cargo could be loaded directly in cars at the shed, switched to the car barge, and taken direct to Vancouver and placed on the rails. This would save handling from shed to boat at the Outer Wharf, and from boat to shed again at Vancouver, the final loading into cars taking place at Ogden Point instead of at Vancouver.

"The labor situation is becoming so acute here at the present time that the expense of handling and re-handling is getting to be more than the traffic can bear.

"Our suggestion, roughly, is that half the width of the shed be built for a length of 400 feet on one side on the pier and that one or two slips be provided for the accommodation of the local steamers, thus enabling them to truck freight from the sheds to their decks, as is done at all other piers in this section. The slips should be bridged in a portable manner to carry the railway tracks over. The local engineers would, no doubt, be able to take care of this.

"The East pier would serve the purpose admirably were it not for the fact that it is being used for shipbuilding purposes, and will be for some time to come. In the meantime, the other pier has been built for the benefit of this port, and it seems a pity to have it remain idle for the want of a shed.

"Through the courtesy of Capt. J. W. Troup, who placed his car at the disposal of your committee, we accompanied Mr. Dufresne to Messrs. R. P. Rithet & Company's Wharves, where a Canadian Pacific Railway Company's vessel was being loaded with Oriental freight for Vancouver. There was considerable freight in the shed for Eastern Canadian destinations, also for New York and other United States destinations.

Need Car Ferry Service

"Mr. Dufresne was informed that the volume of this business was insufficient to warrant the employment of a special vessel; therefore, movement was dependent upon the space available on the Canadian Pacific Railway Company's regular steamers. As this is limited, the consequence is that when large quantities of freight are landed from a Japanese steamer there is a delay of some days in transferring it to Vancouver. If these freights were loaded direct into cars, as will be possible when the new shed is completed and rail connection with the car ferry slip provided, quicker dispatch will be possible in addition to a lower cost of handling than is at present possible.

"Mr. Dufresne's attention was further called to the activities of the Canadian Pacific Railway Company's agents in the Orient who are looking after the routing of freights originating there destined for Eastern points on the continent.

"The improved facilities at the Outer Wharves which we are asking for, by saving both time and labor, would be of immense service to the Railway Company's agents in reaching out for business in the Orient.

"We believe Mr. Dufresne was favorably impressed with these representations and we are hoping that his report to the department will result in measures for the construction of the shed on Pier No. 3 and rail connection with the car transfer slip at the earliest possible moment."



TRANSPORTATION



Annual Report of the Transportation Committee

WHILST the transportation conditions which have obtained during the past year are well known, it probably would not be out of place to mention some of the outstanding features and determining factors in connection therewith, as well as the changes which are being made in our entire system.

The movement of munitions and raw materials of all kinds, and the necessary preference given to the transportation of overseas traffic, the shortage of equipment, the numerous embargoes and labor difficulties, have materially increased the cost to both carriers and shippers. Transportation to-day is largely a question of service. Rates and freight classification, whilst important, are only incidental thereto. Prior to the war, and in fact during the first and second years, traffic moved along well defined channels. These conditions have changed. To-day it moves through such channels as are avail-

Controller that all open-top cars loaded with coal from the United States be returned light after being unloaded.

The formation of the Canadian Railway Association for National Defence, now known as the Canadian Railway War Board, relieved the situation very materially. Space will not permit of lengthy reference to what has been accomplished by this Board. Briefly, however, by reason of co-operation and co-ordination of effort, substantial economies have been effected in the operation of trains, movement of freight traffic, cutting out of waste, elimination of so-called "special services," consolidating the movement of less than carload shipments of general merchandise.

It is proper to mention that the shipping public, although in many cases put to increased expense, contributed cheerfully to many of the economies effected, particularly the loading of carload traffic. The success obtained in this direction is reflected in the following figures:

Average number of tons per loaded car handled on—
Canadian railways .....year 1916—20.91
year 1917—21.76
year 1918—23.71

In this connection the Canadian Railway War Board, in a report to the Honorable the Minister of Railways and Canals, said:

"If the record for January, 1918, which shows approximately an increase of three tons per car, is maintained during the year 1918, it will mean a saving of approximately 79,000 tons of coal, 13,271 less trains, the use of 122 locomotives and the time of 350 enginemen and trainmen during the year."

It was further pointed out that the effects of the reduction in the number of cars, by reason of heavier loading, would mean the more expeditious handling of traffic in terminals, and a general improvement in the transportation conditions in this country, which even now are admitted to be better than in any other country of size engaged in war work.

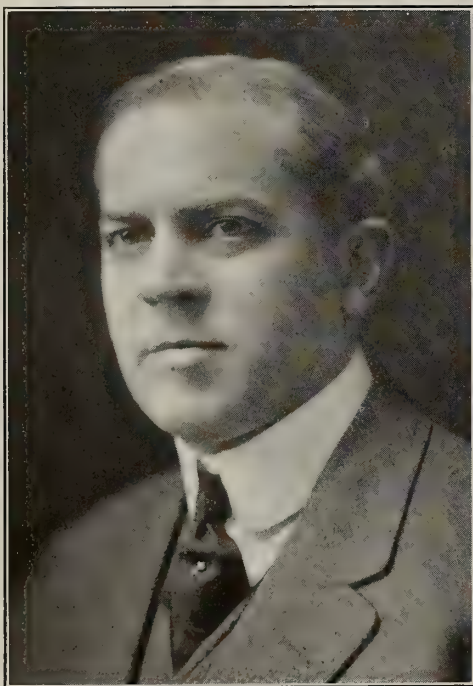
Great Saving of Fuel

A large saving of fuel has been effected by reducing and rearranging passenger train service with the least inconvenience to the travelling public. Further savings were also made through the reduction of speed, both in passenger and freight trains.

Your Committee has co-operated in every way consistent with the Board, and desires to place on record its appreciation of the attention given to the many requests of the department for information, and for assistance in the movement of traffic for our members.

The whole general railway problem in Canada now is under review. The statement of the Prime Minister on "The Railway Situation in Canada," made in the House of Commons on May 15th last, intimated that the Government had come to the conclusion that if it took over the Grand Trunk Pacific Railway, it practically involved the taking over of the Grand Trunk Railway, and amalgamating the Canadian Northern, Grand Trunk and Grand Trunk Pacific Railways into one system, leaving the Canadian Pacific Railway as at present. Whether or not the latter railway could be operated as successfully as it has been in the past, under such conditions, is a problem for the future.

Realizing that the situation had become acute, the Association, on the recommendation of the Transportation Com-



W. R. Breyfogle
The DeLaval Co., Limited, Peterborough
Chairman, Transportation Committee, 1918-19

able. Water transportation was a dominant factor in the movement of low-grade commodities, particularly in the East, and to and from the West via the Great Lakes. A large percentage of this traffic is now being moved all rail. This is due in part to the transfer of a considerable portion of our inland fleet to the Atlantic. As a result the rail carriers have been called upon to provide increased facilities which have been difficult to obtain.

International Traffic

Many serious complaints have been received in regard to the movement of traffic from Canada to the United States, because of car shortage due to the surplus of Canadian cars held by United States roads. Domestic traffic also suffered during the past year because of this condition, and also by reason of the fact that arrangements were made by the Fuel

mittee, adopted a resolution at the Annual Convention held in Toronto in 1915, recommending that the Government appoint a special commission for the purpose of investigating transportation conditions, and of making such reports and recommendations as might seem proper. The appointment was made, and, although the Commission was unable to agree upon its findings, resulting in two reports, the majority recommended what is now suggested by the Premier. It was unanimous in the view, however, that Government ownership was undesirable, and whilst the minority report suggested that the railways in difficulties should be given further assistance, the majority expressed the opinion that a Board of Trustees, absolutely free from political interference, would solve the situation. Both reports disclosed the fact that the situation was serious, and that something should be done immediately to relieve it.

The Need of Equipment

After several sessions of your Committee, and nearly a full day's debate at the annual meeting in Winnipeg last June, a resolution was adopted urging upon the Government, as a matter of pressing national necessity, that immediate steps be taken to assist in overcoming the present need for equipment, which at that time existed, by providing, as far as possible, an adequate supply of cars and locomotives, and turning them over to the companies under lease or contract of purchase. It was also suggested to the Government that a Board of Directors be appointed to receive all moneys of the companies unable to meet their obligations, and to determine and supervise all expenditures of railways to which advances might have to be made. Your Committee is pleased to report that action has been taken in regard to equipment, the following orders having been placed with the different car companies in Canada:

16,950 freight cars, distributed as follows:—

Box cars	
Government railway	8,000
C.N.R.	5,000
Stock cars	
Government railway	1,300
C.N.R.	300
Gondolas	
Government railway	400
C.N.R.	250
Ballast cars	
Government railway	400
C.N.R.	250
Flat cars	
Government railway	250
C.N.R.	500
Refrigerator cars	
Government railway	100
C.N.R.	150
Oil-tank cars	
Government railway	25
C.N.R.	25

Orders have also been placed for 236 locomotives.

In this connection the Premier said, in his statement to the House:

"The Government have not been unmindful of their duty to see that adequate rolling stock and motive power should be provided for all the railways of Canada, as far as possible during the past twelve or fifteen months. The Department of Railways and Canals during that time assisted the Grand Trunk in the matter of motive power to a very considerable extent. They provided for them 47 Mikado engines. The Department has at the present time under order for the Grand Trunk Railway, 75 Mikado engines, 20 switching en-

gines and 15 Pacific type passenger engines. The total outlay for these engines is \$8,751,000."

This new equipment is being received at the time of writing this report, at the rate of ninety cars per day. There is, therefore, every reason to believe that in so far as the movement of overseas and domestic traffic is concerned, there will be little cause for complaint.

The taking over of the United States railways by the Government has revolutionized transportation conditions in that country. As only a short time has elapsed since the change, the effect thereof remains to be seen. There does not seem to be any doubt that such action was necessary. Under the old system it was impossible to bring about complete co-operation and co-ordination. The United States Government has recently placed orders for approximately 100,000 cars of different kinds, as well as a large number of locomotives. It has also taken steps in other directions, for example, by increasing the facilities for shipping by water. As an illustration, barges are being put on the Erie Canal and a regular line of steamers on the Great Lakes, all of which are being operated under Government supervision. This action will no doubt relieve the situation materially. These improvements are mentioned, as they are of vital interest to Canadian manufacturers.

Export Trade

Representations have been made, with good results, to the Department of Trade and Commerce in respect to requisitioning of steamships in the services from Canada to South Africa, and from Canada to Australia and New Zealand. In this connection it is suggested that the Association express its appreciation of the determination of the Government to build a Canadian merchant marine. The necessity therefor is so apparent that nothing further need be said than to call attention to the fact that it was announced a short time ago that Chairman Hurley, of the United States Shipping Board, would ask the Appropriation Committee for two and a half billion dollars for the construction of merchant ships. From this it is quite evident, as far as the United States is concerned, that that country will not be dependent, after the war, on foreign shipping to anything like the extent it has been in the past.

James A. Farrell, President of the United States Steel Corporation, in addressing a Convention of the National Foreign Trade Council, in Cincinnati, recently, in regard to a merchant marine, said:

"We have possessed natural resources and wealth equal to the carrying out of a shipping programme, the like of which the world has never seen, yet for two generations, in which the commerce and the industry of the world were making advances beyond all previous precedent, we were content to rely on the shipping of other nations, our competitors in foreign trade, for the transportation of overseas commerce."

Further:—

"It had indeed become patent, long before our entry into the war, that the future of our foreign commerce was indissolubly associated with the upbuilding of our mercantile marine."

At this conference a Declaration of Principles was adopted, urging upon the Government the importance of preparing for after-war trade conditions.

There are now in Canada fourteen shipyards in which steel vessels are being built. Most of them are still working on ships for the Imperial Government, ordered through the Imperial Munitions Board. Some of the yards, however, are working on vessels for our Government. As soon as the contracts with the Imperial Government are completed, new contracts will be placed with these various yards by the Dominion Government.

General Increase of Fifteen Per Cent. in Freight and Passenger Rates

The Board of Railway Commissioners finally disposed of the application of the railways for a general increase in freight and passenger tolls by Order dated December 26th, 1917. With the exception of rates on coal and coke, the Board took into consideration the recommendations of your Committee as reported at the last Annual Convention. The general increase asked for was not granted, especially in the West, as the jurisdiction of the Board was limited, because of an agreement made in 1897, between the Federal Government and the Canadian Pacific Railway Company, known as "The Crow's Nest Pass Agreement." Under its provisions the Governor-General in Council was authorized to grant the Canadian Pacific Railway Company a subsidy towards the construction of a railway from Lethbridge through the Crow's Nest Pass to Nelson, in consideration of a reduction in tolls on certain commodities, such as agricultural implements, cordage, binder twine, coal oil, iron (bar, band, etc.), pipe and pipe fittings, nails, spikes, horseshoes, wire, window glass,



—B. and C. Press Photo

J. A. Riordon

Standard Sanitary Manufacturing Co., Limited, Toronto
Retiring Chairman, Transportation Committee

paper for building and roofing purposes, roofing felt, paints of all kinds, oils, live stock, hardware and householdware. Although the agreement is between the Government and the Canadian Pacific Railway, the Board has taken the position that it would be discriminatory for the Canadian Northern or Grand Trunk Pacific to charge higher rates than the former company.

Briefly, the Board allowed the increase on all class and commodity rates in the East, with the exception of rates on common clay, crushed stone and sand and gravel, which was confined to 5c. per ton.

Fifteen per cent. was allowed on grain with a maximum of two cents per hundred pounds, and the same percentage of increase on lumber. As an increase had been previously allowed in class rates from the East to the West, effective September 1st, notwithstanding the protest of this Association and the Western Boards of Trade, the Board held down the increase in the proportional rates to the Head of the Lakes to ten per cent. The new through rates to the West,

however, were made up by the addition of ten per cent. to the present proportional rates, and fifteen per cent. to the Fort William-Port Arthur westbound rates to so-called "Prairie Territory," which included Ontario west of Port Arthur, Manitoba, Saskatchewan and Alberta. A ten per cent. increase was allowed to "Pacific Territory," which covers generally the Province of British Columbia and Pacific Coast points. No increase was allowed on commodity rates to the Pacific Coast, under which the bulk of that traffic moves. The increase asked for was allowed on class and commodity rates between points in "Prairie Territory," subject to the limitations of The Crows' Nest Pass Agreement, with the exception of grain and grain products and lumber. On the former a flat increase of two cents per hundred pounds was allowed to Lake Superior ports. To other points the increase allowed was fifteen per cent., subject to a minimum of two cents per hundred pounds. As lumber rates in the West are not affected by The Crows' Nest Pass Agreement, arbitrary increases were allowed, maintaining, however, the relationship which existed between various producing points.

No increase was allowed in the charges for special services, such as switching, either local or interswitching, weighing, demurrage, refrigerator, heated car service, car diversion, reconsignment, storage or wharfage. A flat increase of fifteen cents per ton was allowed on coal.

The Board did not fix a date upon which the increased rates should terminate, notwithstanding the representations made by the Association and others in this respect.

The decision did not meet with favor in the West, and protests were made by the Winnipeg Board of Trade and others to the Governor-General in Council. After all parties were given an opportunity to be heard, an Order-in-Council was passed, directing that the Order of the Board of Railway Commissioners, allowing the increases mentioned, be amended by providing that the same shall cease to operate one year after the declaration of peace, following the present war. The original Order of the Commission in respect to tolls was not changed.

In approving the general increase in rates, the Governor-General in Council made a second Order under the War Measures Act, directing that the Canadian Pacific Railway Company pay to the Government of Canada the following taxes:

1. Half of its net earnings from railway operation in excess of seven per cent. on its common stock (after paying fixed charges, appropriation for pension fund and dividends on preferred stock).

2. Income tax on the Company's special income (inclusive of all the company's income, except earnings from railway operations), under the provisions of the Income War Tax Act, 1917, or any amendment thereof hereinafter enacted, provided that the total amount to be paid each year by the Company shall not be less than:

- (a) The Company's net earnings in such year from railway operations, and from special income as defined above, in excess of ten per cent. of its common stock (after paying fixed charges, appropriation for pension fund and dividends on preferred stock), up to \$7,000,000; or
- (b) The amount by which its net earnings from railway operations exceed the net earnings from railway operations for the fiscal year ended December 31st, 1917, due to the increase in freight and passenger rates granted by the Order of the Board of Railway Commissioners, dated 26th December, 1917.

Briefly, this Order deprived the Canadian Pacific Railway Company of any improved revenue that might result from the increased rates.

The Manitoba Government and the J. H. Ashdown Hardware Company, who also protested, were granted leave to ap-

peal to the Supreme Court from the Judgment, upon the grounds that the Board exceeded its jurisdiction in disregarding an Agreement between the Manitoba Government and the Canadian Northern Railway, made in 1901, and later sanctioned by Dominion Act. Under it the Lieutenant-Governor in Council of the Province of Manitoba was given authority to determine the rates within certain territory, under consideration of a guarantee of certain bond issues of the Canadian Northern Railway. The Canadian Northern Railway was also granted leave to cross appeal from the decision in regard to the application of The Crows' Nest Pass Agreement.

Car Service Rules

A new set of rules which, although substantially increasing charges and reducing the free time on certain commodities, was adopted and approved by the Board of Railway Commissioners. This action was necessary in view of the serious shortage of equipment, and the conditions obtaining in the United States.

When the matter was before the Board, our application for the so-called "Average Agreement" was renewed. The Board advised that it would not deal with it until after the war. The same answer was also given in regard to reciprocal demurrage, which certain organizations have asked for. The Rules now in effect follow closely the National Code of Rules in force in the United States.

Proposed Freight Classification No. 17

The general revision of the Canadian Freight Classification was referred to at length in the last Annual Report. The question was taken up by the Board of Railway Commissioners at sittings held in the East and West. At the hearing in Winnipeg on June 22nd last, the Board announced that nothing further should be done in regard thereto, until it decided on the rule covering mixed carload shipments. Since then representatives of the Western lines have suggested a revision of the present classification along the following lines:

1. Adopt the description of articles contained in proposed Classification No. 17.

2. Abolish all trade lists, but group analagous articles together, such as agricultural implements, iron and steel, hardware, in so far as they are the product of the same factory, canned goods, etc.

3. Increase the minimum weights where the business requirements of the country will permit.

A conference with the principal Boards of Trade in the West was held in Calgary in February last, the rules were gone into at considerable length, and an agreement in part arrived at. The chairman of the Transportation Committee, and the secretary of the Prairie Provinces branch attended the conference, but took no part in the discussion. On receipt of their report your Committee concluded that the Association should not deal with this question pending a decision of the Board of Railway Commissioners in regard to mixed carloads, as announced at the Winnipeg sittings, and instructions were given to that effect.

It has recently been intimated that the question will be opened up again at an early date.

Classification, General

Although three supplements were issued during the year, few important changes were made in the classification proper. Several applications for revision of ratings are still under consideration by the Canadian Freight Association. In one or two cases appeals were made to the Board of Railway Commissioners with satisfactory results. The numerous applications for ratings indicate the importance of the freight classi-

fication. The following is a list of those dealt with during the past year, some of which have been disposed of while others are still pending:

Alimentary paste.	Fuse (time), parts.
Asbestos cement.	Glass photo negatives.
Beds.	Glassware, cut.
Bed springs.	Hog hair.
Binder twine.	Ice-cream.
Boats and canoes.	Ice-cream cones.
Bronze powders.	Ladders, swings.
Camp stoves, K.D.	Baking and ironing boards.
Cans.	Leather, artificial.
Carriage rails, plated.	Machines (meat or food cutting and slicing).
Catsup in glass.	Owners' Risk Clause.
Cheese boxes.	Paper Excelsior.
Cheese presses.	Phonographs, mixed C.L. with furniture.
Cigars and cigarettes.	Plow shares, mouldboards.
Cotton duck.	Pole line hardware.
Cotton-seed soap stock.	Pop-corn confectionery.
Cylinders, iron or steel (returned).	Prepared poultry foods.
Dry cell batteries.	Rubber and rubber goods.
Dry measures.	Small cars ordered, large cars furnished.
Dummies or forms, dress.	Soap.
Electric motors.	Staples, wire.
Electrolytic tank arresters.	Steel barrels, drums and kegs.
Excelsior pads.	Stove putty.
Felt soles.	Three-in-One oil.
Fibreboard.	Toys, toy horses.
Field kitchens.	Trailer trucks.
Filing cases and supplies.	Vegetables in brine.
Fish.	Vehicles, self-propelling on flat cars.
Freight delivery wagons or trucks.	Veneer.
Fresh frozen meats.	Wagon tongues.
Fresh meats and packing-house products in mixed carloads.	Wire horse muzzles.
Friction clutches.	

The following is a list of changes proposed by the carriers which have been dealt with:

<i>Sup. 10 to 16.</i>	Electrical machinery and supplies.
Reissue.	Felt, papermakers'.
<i>Sup. 11 to 16.</i>	Foundry facings.
Pouches, mail.	Grain storage bins.
Boot and shoe forms and trees.	Hats and caps.
Brick.	Millinery and millinery goods.
Carbon electrodes.	Powder, black blasting.
Door checks.	Syrups, fruits, beverages.
	Freight delivery trucks.

Interswitching

The Board of Railway Commissioners, on representations made by the Association, made an Order in July, 1908, known as "The General Interswitching Order," fixing the tolls for the switching of traffic, consigned for delivery on the tracks of a carrier other than that on which it originates.

Complaints have been made within the last five or six years as to the application of the Order, both by the carriers and the shippers. The Commission has recently dealt with these complaints at length, and has cleared up many of the different questions which have been raised. In the Judgment the Chief Commissioner said:

"An interswitching service is of value to the public; it is not only a convenience, but works economy and expedition in transportation. By it the traffic of the carrier originating and hauling it to its destination is delivered to the consignee who is located on the tracks of another railway within the same terminal or group of terminals, or having been loaded on the sidings of one carrier is by it transferred locally to the railway over which it is to be taken to its destination."

In answer to the position taken by the carriers, that it is not fair to require them to throw open their facilities to a

competing line, the Board holds that public interest is a question of vital concern. To quote further from the judgment:

"I am of the opinion that interswitching should be no longer carried on as a matter of grace, but as a matter of right. The General Order not to be merely a tariff but an Order which provides for and compels the service to be given. I think the carriers should be compelled at all times, according to their powers, to furnish an interswitching service equal to the service accorded their own traffic at all points where interchange tracks are now installed, or may hereafter be provided, and that the line carrier, when required by the shipper or consignee, should be compelled to place cars at the proper point of interchange, and to requisition the service of the interchanging carrier or carriers."

With regard to team tracks, the service has been extended to cover same, subject to the fact that in time of congestion the railway company owning the terminal facilities, not only has the right, but is in duty bound to first look after the placing of cars of traffic originating on its own line. A higher charge, however, will be made for delivery on team tracks than on private sidings.

The Order is important to our members, both in respect to the movement of traffic and the location of their industries. It requires joint service, reasonable rates, and to a certain extent, gives effect to the Railway Act in respect of interchange of traffic.

The Board approached the question from the standpoint of public interest, treating the interswitching service as a joint movement, and took the same stand as the late Chief Commissioner, Mr. Justice Killam, which was that contended for by the Association. The Order, however, which becomes effective July 1st, takes away from the shipper the right to route his freight, in that it provides that the tolls prescribed shall not apply to deprive the initial carrier of the line haul on traffic loaded or to be loaded on its railway, including sidings connected therewith, if the route is reasonable and the initial carrier furnishes at destination, itself or through its connections or by interswitching, the same delivery and facilities of the competing carrier at no greater charge.

It also provides that if a car is expressly ordered by the shipper to be interswitched to another railway, notwithstanding that the initial carrier can furnish a reasonable service, the said initial carrier may, in lieu of the tolls prescribed in the Order, charge and collect its ordinary published tariff rate to the interchange, which rate shall be an additional charge against the shipment. If, however, the initial carrier fails or neglects to furnish the shipper with a car within forty-eight hours after it has been ordered, or, should the through movement by the route of the initial carrier be embargoed, the shipper shall be entitled to require the carrier to accept and place, and the said carrier shall so accept and place, an empty car of any other carrier, in which case the tolls prescribed in the Order shall apply.

It has been pointed out that this will result in disputes regarding the movement, the placing and delays in the furnishing of equipment, and furthermore, that it will defeat to a very large extent the free interchange of traffic, as pointed out by the Chief Commissioner in his judgment, in which he says:

"An interswitching service is of value to the public. It is not only a convenience, but works economy and expedition in transportation."

Should the Order work out as anticipated, representations will be made to the Board accordingly.

Coal and Coke

The Department has assisted members materially in the movement of coal and in securing their requirements. Close attention has also been given to the movement of coke from Detroit, reports of which are received daily.

Increased Cartage Charges East of Port Arthur

Cartage charges in Eastern Canada were again advanced, effective March 11th. A number of articles were also added to the list of exceptions. The cartage companies were able to show that the rates for this service in cities of the United States were even on a higher basis than those they proposed. Several complaints were received, but as the Board of Railway Commissioners has no jurisdiction over cartage companies, an appeal could not be made to that body.

Notice of Arrival of Goods at Destination

Another question that received the attention of your committee during the past year was an application of the railways to the Board of Railway Commissioners for approval of the following addition to section 6 of the bill-of-lading:

"Such notice shall be held to have been duly given if deposited in the post office, postage prepaid, addressed to the person to be notified, or to the consignee, if any such person be named, at the address stated therein."

This application, it is believed, was the result of a decision of the Quebec Court, in which it was held that the sending or giving of a notice is a condition precedent to the right of the carrier to do the things or exact the penalties provided for in section 6 of the contract, and that the burden of proof that the notice reached the party entitled to it was upon the carrier. All members were duly advised of the application, and a large number strongly opposed it. As a result of representations made to the Commission through counsel, at a public sittings held in Toronto, the application was withdrawn.

Regulations Governing So-called "Dangerous Articles"

This question, which has been before the Board for several years, resulting in a number of hearings and conferences, was finally disposed of by a General Order, effective December 31st, 1917. A number of modifications, of which members were duly advised, have been secured.

Embargoes and Delays in Transit

The situation during the winter of 1917-18, due to embargoes, has been very acute, and the Department has been called upon to assist members in securing permits from the railways for the movement of many different commodities, as the following list will illustrate:

Absorbent cotton.	Lumber.
Agricultural implements.	Musical instruments.
Ash timber, rough turned.	Nitrate of soda.
Automatic paper box machines.	Paint, dry.
Bauxite ore.	Pattern print rollers, brass.
Boiler plate.	Phosphate rock.
Broom corn.	Sheet iron or steel.
Carbon black.	Silicate of soda.
Corrugated paper.	Steel wire.
Cotton and yarn.	Stoneware.
Excelsior.	Sulphur.
Fire-clay and Fire-brick.	Talc.
Fire sand.	Whiting.
Glass tubing.	Window glass.
Grease.	Woodpulp.
Pig-iron.	Wool.

Stop-off Charges—Grain for Milling East of Port Arthur

Another matter of interest to our members that was disposed of during the past year was the complaint against the stop-off charge of two cents per hundred pounds in effect east of the Lakes. By Order of the Board, effective November 1st, the Canadian Pacific Railway was directed to reduce the charge to 1 cent. per hundred pounds for milling Western grain, ex lake, in transit.

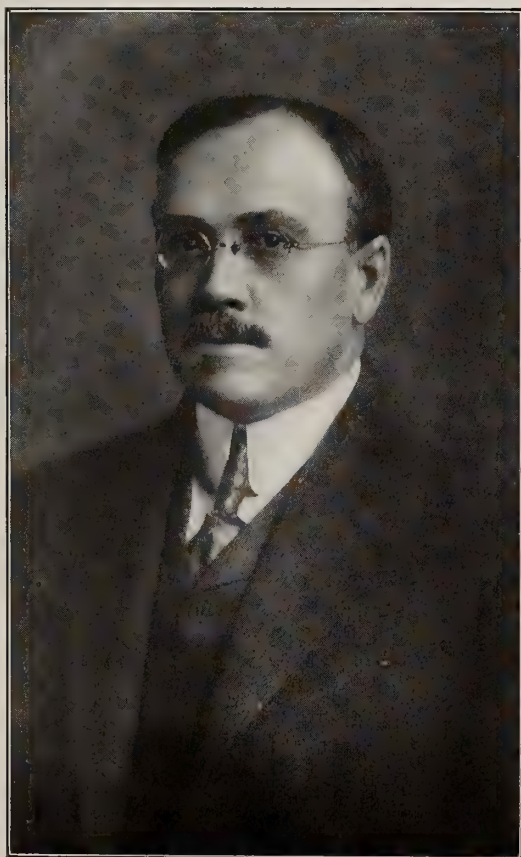
Minimum Weights on Lumber, Tan Bark, and Other Forest Products

New tariffs were published, effective May 21st, 1917, materially increasing the minimum weights on lumber and other forest products. As they could not be complied with, and as the railways refused to revise their tariffs, complaint was made to the Board, and after hearing and investigation, an Order was made reducing them to what could reasonably be loaded.

At the same time, the minimum weight on tan bark in box and stock cars was advanced. Interested members complained of the increase, and on appeal to the Railway Commission the railways were directed to revise same.

Proposed Revision of Stop-off and Re-shipping Arrangements on Lumber

Carriers advised in March that they proposed to change their stop-off and re-shipping arrangements on lumber, materi-



J. E. Walsh

Manager, Transportation Department, Canadian Manufacturers Association

ally curtailing the existing service, as well as increasing the charge for stop-over. Conferences were arranged with interested parties, resulting in the proposed revision being withdrawn.

Less than Carload Shipments of Packing-House Products in Pedlar Cars

Effective in October last, the carriers in Eastern Canada published tariffs advancing the minimum weight on less than carload shipments of fresh meats and packing-house products shipped in refrigerator cars, from 9,000 to 15,000 pounds. As a settlement could not be effected, an appeal was made to the Board of Railway Commissioners, resulting in the tariffs being suspended. After hearing all parties, the Board allowed an increase to 12,000 pounds. The Western packers were able to compromise with the carriers on a minimum of 10,000

pounds. On further complaint the Board, by an Order, directed the carriers to include oleomargarine.

Western Packing-House Products to Atlantic Ports for Export

When the complaint in regard to increased rates and minimum weights on Western packing-house products to Atlantic ports for export came up for hearing at a sittings of the Board in Winnipeg in October last, an application was filed for export rates from packing centres in the West to the Atlantic seaboard properly related to the rates in effect from packing centres in the Western United States. After stating the complaint to the Board, the railways agreed to reinstate immediately all rates and carload minimums in effect prior to July 1st, 1917, and to meet the Western packers at an early date to discuss a general readjustment of these rates and minimum weights. The advances in the rates complained of were as follows:

Winnipeg to Montreal	7c. per 100 lbs.
Winnipeg to St. John, West St. John and Halifax	14c. "
Edmonton to Montreal	4c. "
Edmonton to St. John, West St. John and Halifax	11c. "
Increase in minimum weight, Winnipeg to Montreal, 6,000 lbs.	

Some of the other matters dealt with and disposed of during the year were as follows:

Demurrage charges on cars held at Cartier.
Demurrage charges for heatless days.
Free time on export traffic at Atlantic ports.
Pooling of box cars.
Prompt handling of tank cars.
Track rental charge on private cars.
Readjustment of milling in transit arrangement on grain from United States, milled in Canada and product re-shipped to United States.
Ocean rates.
Increased rates, Cornwall Street Railway.
Transcontinental rates.
Advance in rates on woodpulp, Canada to United States.
Joint rates between Central Ontario points and Western Ontario.
Revision of Railway Act.
Shipping containers—proposed Government specifications for fruit baskets.
Siding agreements.
Charges for placing cars on private sidings.
Stop-off arrangements on canned goods for completion of load.
Storage—Head of the Lakes.
Construction of interchange facilities at Brantford, Thorold, Aurora, Welland, Ont., and Forest, Man.
Local switching.
Reconsigning charges at large terminals.
Terminal interswitching.
Charges for tariffs.
War tax, freight tolls in United States.
Stop-off charge on live stock for completion of load.
Live stock contract.
Electricity, production and distribution.
Natural gas, production and distribution.
Automobile shipments on open cars.
Cartage service on fish in carloads.

Delays in Unloading Equipment in Eastern Canada

The carriers complained of serious delays to cars on hand with certain parties at different terminals in Eastern Canada. Interested members were communicated with, and it was shown that in practically all cases the delays charged to them were due to causes beyond their control. In many cases the fault was with the carriers.

Express Rates and Classification

Changes proposed during the past year in rates, classifications and regulations covering containers, have been dealt with by conference, and in nearly all cases disposed of satis-

factorily. As indicating the interest of members in some of these matters, it might be mentioned that fifty-five communications were received in regard to a change proposed in the handling of returned empties by express.

The following is a list of the questions taken up:

Agricultural implements (hand), parts and tools.	Cigars, cigarettes and tobacco.
Agricultural implements.	Engravings.
Baskets for fresh meats and packing-house products.	Gramophones.
Butter in earthenware jars or crocks.	Light and bulky goods.
Ranges.	Liquor.
Plate glass.	<i>General.</i>
Oleomargarine.	Containers for moving picture films.
Green salted hides.	Containers for Paris green.
Paper boxes.	Cartage; C.L. shipments, fish.
Cooking oil.	Labels for celluloid.
<i>Sup. B. to 3.</i>	Customs storage fee.
Dead rabbits.	Customs service fee.
Stearine.	Delays to shipments.
Tallow.	Delivery limits:
Plants.	Davenport.
Shrubs.	Regina.
Seeds.	Winnipeg.
<i>Sup. C. to 3.</i>	Empties returned.
Change in scale "N."	Marking and packing shipments.
Corrugated containers for liquors or liquids.	Silver bullion.
Furniture.	Proposed switching and terminal charges.
Maple syrup.	Proposed general revision of rates (block system).
<i>Sup. D. to 3.</i>	Terminal facilities—Mimico, New Toronto.
Lard.	
Stock and poultry food.	
Corrugated and fibreboard containers, specifications for.	

Claims

Although the Association only undertakes to handle claims that have been long outstanding, or which have been disputed or declined by the carriers, the Department handled successfully during the past year claims amounting to \$18,303.09. In some instances payment had been refused, and in others unnecessarily delayed.

Work of the Department

In this connection the Committee considered it proper to call attention to the increased use of the Department by members and others. During the last fiscal year, 6,418 letters and telegrams were received, exclusive of tariffs and circulars. These communications gave rise to considerable correspondence, resulting in, approximately, 8,076 letters in reply. To this must be added the many circulars and general letters advising of important changes in rates or classifications. For example, a change affecting lumbermen east of Port Arthur calls for one hundred and twenty letters. The number of circulars issued varies.

In addition to the above, the Department keeps on file practically all of the freight tariffs of the different Canadian railways, which are received at an average rate of ten per day, including supplements. These must be checked with a view of determining the effect the changes would have on members generally. It is, of course, impossible with the present staff, to check each one in such a manner as to detect individually every change and advise each member. The Department has been able, however, to call attention to the greater part of the changes proposed by the carriers affecting members, and in such cases advise them promptly. Notwithstanding this, it is the duty of each member to keep himself posted in regard to the changes which take place in railway tariffs. This obligation is placed upon him by the Railway Act, which requires that the shippers must have knowledge of the legal

rates in effect at the time the traffic moves. Rates, manner of packing, description, the contract of carriage, the payment of tolls in case the consignee fails to hand them over, are fixed by law. All of these things are covered by tariffs, classification and orders of the Board of Railway Commissioners, made under the Railway Act. Constant changes are being made in all of these conditions, requiring close supervision.

The manager of the Department attends all important traffic sittings, and follows closely the decisions of the Board, affecting our members. In the cases in which members are interested, statements are compiled and briefs prepared and presented on their behalf. The organization of branches with permanent secretaries has increased this branch of the Association's activities.

Conferences are frequently held with representatives of the railways and express companies for the purpose of arriving at a better understanding of contemplated changes. This procedure has the endorsement of all concerned.

All of which is respectfully submitted.

JAMES A. RIORDON,
Chairman.

J. E. WALSH,
Manager Transportation Department.

Big Pulp Industry for Coast

Beaver Cove Lumber & Pulp Company Formed to Operate on Vancouver Island

Another large industrial enterprise for the Pacific Coast is under way. Headed by W. H. White of Bayne City, Mich., a well-known lumberman, and backed by Chicago capital for the most part, the Beaver Cove Lumber & Pulp Co. has been formed to operate a lumber and pulp mill at Beaver Cove on Vancouver Island. The plans for the work have been about completed.

The company has been organized with an authorized capital of \$1,000,000. Plans for the plant call for five units, with an output of 200 tons of sulphate pulp per day, and lumber accordingly. With due regard to the labor situation only one unit will be operated on the start. This will have a capacity of 100,000 feet of lumber per day, 60,000 feet for use in the pulp mill, which will have a capacity of 40 tons per day. The lumber and pulp output in the other four units will be proportionate.

The machinery required for the plant is all on order, with every probability of being met on time, and the plans and specifications for the buildings are about ready.

The original plans were to start operations on a large scale but after a survey of the labor market, and with regard to the increasing scarcity of capable men such as would be required for successful operation on a big scale, officials of the company abandoned the original idea of launching out on its full programme and decided to start according to conditions as they were found to exist.

The company has taken over from the White Bros. Lumber Company 500,000,000 feet of timber adjacent to Beaver Cove and advantageously situated as regards the operations of the lumber and pulp mills. As the labor market improves, and commercial conditions become more settled, the company will bring into operation other units. Meanwhile the officials will be familiarizing themselves with general conditions with the ultimate object of operating, as soon as times warrant, the full capacity of all five units. Mr. G. C. Pratt, former secretary of the Whalen Pulp & Paper Co., is secretary of the new company.



Some of the Maritime Province Manufacturers in Session at Moncton

In the front row will be noticed, reading from left to right, J. B. Toombs, mayor of Moncton; F. W. Armstrong, vice-chairman, N.S. Compensation Board; W. S. Fisher, chairman, Maritime Branch; E. B. Saunders, assistant field secretary, National Safety Council; F. J. G. Knowlton, chairman, Workmen's Compensation Commission for New Brunswick.

Proceedings at Maritime Branch Annual

Several Important Addresses Were Delivered and a Number of Resolutions Passed—
W. S. Fisher Re-elected President and Other Officers Appointed—Vocational
Training Came up for Consideration by Delegates

THIS year's annual meeting of the Maritime Branch, C.M.A., was held in Moncton, on May 29, and was largely attended. Mr. W. S. Fisher, St. John, chairman of the branch, presided, and among those who registered at the opening session were: G. A. Myers, Truro; A. MacLean, Bathurst; Geo. A. Schryer, Bathurst; A. McLennan, Campbellton; E. B. Saunders, Chicago; W. F. Humphrey, Moncton; G. McAvity, St. John; Paul Lea, Moncton; R. B. Stewart, New Glasgow; H. McDonald, Moncton; R. G. Hood, Quarryville; A. Curry, Amherst; H. A. McKnight, C. D. Dennis, A. G. Robb, B. R. Brownell, J. Masters, Amherst; A. T. Weldon, A. C. Chapman, Moncton; A. W. Fall, C. M. Crockett, New Glasgow; Rufus E. Dickie, Stewiacke; George F. Douglas, Amherst; L. W. Simms, Alex. Wilson, St. John.

An address of welcome was delivered by Mayor Toombs, of Moncton, following which came addresses by F. J. G. Knowlton, Chairman of the New Brunswick Workmen's Compensation Commission; F. W. Armstrong, Halifax, of the Nova Scotia Workmen's Compensation Board, and E. B. Saunders, Field Secretary of the National Safety Council, Chicago.

Afternoon Session

At the afternoon session an address was delivered by Hon. O. T. Daniels, Attorney-General of Nova Scotia, who argued in support of subsidies from Federal Government for educational purposes in the Maritime Provinces in lieu of land grants for western provinces.

Prof. F. H. Sexton, of the Nova Scotia Technical College, was to have given an address on education, but was unable to be present owing to an injury to his foot. His place was taken by Fred Magee, M.P.P., of Port Elgin, who gave an excellent address. Prof. Clarkson, of New York, was also

unable to attend. He is an engineer of Cape Split Power Company, and was to have spoken on Water Power Development. His place was taken by Dr. Archibald of Acadia University, who described possibilities through harnessing tides of the Bay of Fundy, supplying electrical energy for industries in the Maritime Provinces.

Hon. J. B. M. Baxter, St. John, and H. J. Logan, Amherst, spoke in support of maritime union.

Election of Officers

At the evening session officers were elected as follows: Chairman, W. S. Fisher, St. John; Vice-Chairman, E. E. Shaw, Sydney; L. W. Simms, St. John; C. C. Starr, Halifax; Executive, S. E. Elkin, G. McAvity, St. John; C. D. Dennis, Amherst; A. D. Ganong, St. John; Angus McLean, Bathurst; W. F. Humphrey, Moncton; H. S. Crowell, Yarmouth; A. R. McPherson, Windsor; George Tillman, Halifax; C. M. Crockett, New Glasgow; R. H. McKay, J. T. Cumming, New Glasgow; C. S. Cameron, Sydney; A. G. Robb, Amherst; W. D. Piercey, Halifax; J. A. Reid, Fredericton; C. S. Sutherland, H. R. Thompson, Amherst; Secretary ex-officio, George T. Douglas, Amherst; Archibald McCall, New Glasgow.

A resolution was adopted as follows:

"Whereas, there is a very heavy movement of merchandise on our railroads, particularly on shipments to United States and,

"Whereas, the railroads are unable to supply necessary equipment for moving the business on American-owned cars and,

"Whereas, the railroads refuse to allow loading of Canadian-owned cars for the United States in spite of the fact that there is a surplus of these Canadian-owned cars at present on the railways and,

"Whereas, the movement of empty Canadian-owned cars as practised at present from points where they can be loaded to points where they can secure loading for Canadian destinations, is not economical, and further leads to congest traffic;

"Therefore, be it resolved that this convention request removal of restrictions refusing permission to load local Canadian-owned cars for United States points, and,

"Further be it resolved that we urge upon the railway authorities to take the necessary steps to arrange with the United States authorities for an exchange of cars so that all unnecessary movement of empty equipment be avoided."

A resolution was adopted endorsing the stand taken by Hon. O. T. Daniels, who spoke at the afternoon session regarding subsidies in lieu of land grants.

Water Powers

Another resolution follows:

"Whereas, at the last convention of the association the question of utilizing of water power of the Maritime Provinces was discussed and considered, and it was resolved that the Legislative Assembly of New Brunswick be requested to appoint a commission to survey and to assist in any way toward the development of the water powers of the province, and,

"Whereas, we are pleased to learn that this step has been taken by the New Brunswick Government, and the matter has again been brought to the attention of the association in the address at this meeting by Prof. Archibald, of Acadia College, who described the possibilities of harnessing of the tides of the Bay of Fundy at Cape Split, which gives promise of development of tremendous electrical power, and should it prove that such power can be transmitted economically its value can hardly be estimated;

"Resolved that the Legislatures of New Brunswick and Nova Scotia be urged to follow up actively these lines of provincial interest."

A resolution was adopted endorsing addresses by Hon. J. B. M. Baxter and H. J. Logan on Maritime Union. The association reaffirmed the resolution passed at the last convention and urged continued activity on behalf of its members as well as of the Legislatures interested, until desired object is attained.

Vocational Training

Another resolution was adopted as follows:

"Whereas the association is deeply interested in the subject of vocational training as advocated at the last convention of the association and again on the occasion of the most interesting and valuable address delivered by Mr. Magee, representative of the New Brunswick Legislature; therefore be it resolved that we reaffirm the resolution passed at the last meeting and urge that every effort be made to put into practical effect the wise and advanced legislative measures with this object in view passed at the last session of the Legislature of New Brunswick."

There was considerable discussion regarding plans for putting the Act into effect. It was decided to appoint committees in various centres to interview city officials with a view to having them take immediate action in accordance with the Act. Committees were named as follows: St. John, L. W. Simms, W. K. Ganong; Moncton, J. A. Marven, W. F. Humphrey; Fredericton, J. A. Reid and Mr. Coulter; St. Stephen, A. D. Ganong, C. E. Huestis; Woodstock, John F. Dickinson, Alfred Page. The association expressed appreciation of services of J. A. Reid and L. W. Simms, of the Legislative Committee, in connection with the Workmen's Compensation at Fredericton.

Shipbuilding at Halifax

Plans of the Halifax Shipyards, Limited, Are Explained by Mr. J. W. Norcross, President of the New Company

The following information regarding the plans of the Halifax Shipyards, Limited, which are about to establish a big steel shipbuilding plant at Halifax, were supplied to the *Halifax Chronicle* by Mr. J. W. Norcross, president of the company:

"When our plant is completed," said Mr. Norcross, "we will have established at Halifax one of the finest shipyards on the American continent. We have chosen the best site available, a site which is admirably suited for the purpose. Halifax harbor possesses natural advantages which make the general location an ideal one, and adequate arrangements have been made. Our first step, of course, will be to start building the three ten thousand ton vessels for which we have a contract with the Dominion Government, but our building berths will not be limited to that capacity. They will be of sufficient dimensions to admit of the construction thereon of ships of the same size and type as the Allan Line steamers the *Alsatian* and *Calgarian*. Also, the general arrangements will enable the construction of other berths, so that the company would be able to undertake the building of more than three ships."

A point especially emphasized by Mr. Norcross was that local labor would be given first consideration by the company in its undertaking. "We want to use all the labor that you have available here," said he. "We will employ some 3,500 men at our plant. We want good men and we believe you have them in Halifax. There will be 'jobs' for them with us. We can provide employment for the shipwrights now at work here, including those engaged in steamer repair work at the dry dock and for the men at work on the dock. Then, too, you have in this province a large number of men proficient in wooden shipbuilding. As we hope to educate men having this knowledge to the somewhat different work of steel ship construction, there will be further opportunity for Nova Scotians with us."

The site of the plant extends from the Dry Dock, which has been purchased by the company, to Pier No. Six, a waterfrontage of 2,500 feet. After the debris occasioned by the explosion has been cleared away, the work of constructing the building berths will be at once commenced. Arrangements have been made for up-to-date equipment, which will be shipped here immediately and will be installed as soon as the ground has been cleared. All of the machinery and other apparatus will be new.

"I understand that you plan to enlarge the Dry Dock," said the reporter. "Is that true?"

"Well," replied Mr. Norcross, "we intend first of all to devote all our energies to ship construction. The Dry Dock in its present capacity will serve immediate needs, and the first call of to-day is for ships, so that we will proceed at once with the building of these steamers for which we have contracted with the Government. These will be of 10,000 tons, freighter type, and of standard specifications. They will be the largest vessels undertaken in Canada.

"Our expenditure for the shipbuilding plant," concluded Mr. Norcross, "will be between \$3,750,000 and \$4,000,000, and, if the engineers have the plans ready we will start spending that money during the latter part of next week, when we will let our contracts."

The officers of the Halifax Shipyards, Limited, include the following:

Chairman of Board—Jas. Carruthers.
President—J. W. Norcross.
Vice-President and Managing Director—R. M. Wolvin.
Vice-President—M. J. Haney.
Treasurer—F. S. Isard.

Annual Meeting of Prairie Provinces Branch

A Comprehensive Series of Reports Presented by the Various Committees—Excellent
Address Delivered by A. B. Stovel, Retiring Chairman—New Officers Elected,
with N. W. Warren as Chairman for 1918-19

THE annual meeting of the Prairie Provinces Branch, Canadian Manufacturers Association, was held in the branch offices, Northern Crown Bank Building, on the evening of May 28. Following a very comprehensive review of the year's activities by the chairman, Mr. A. B. Stovel, the chairmen of the various standing committees gave a résumé of the work of the year, and officers and committees were elected.

In the discussion arising out of the reports very keen interest was displayed in many of the vital questions created by the war. Especially was this true in connection with the questions of the harvesting of this year's crop and the fuel situation. A committee was appointed to work in co-operation with the citizens committee and the agricultural organization with a view to formulating some manner in which the manufacturers can assist in the harvesting of the crop, by the release of their employees or in any other way that may be deemed advisable.

The fuel question came in for considerable discussion following the reading of the circular bearing the signature of E. H. Macklin, president of the Manitoba Free Press Company, and circulated among the employees of the company, and which outlines a proposition under which the employees may secure their fuel supply for the coming winter, the *Free Press* purchasing the fuel, and the employee paying for his supply by weekly payments.

The plan outlined met with the hearty approval of the meeting which instructed that a copy of Mr. Macklin's circular be sent to all members of the branch.

The report of the Membership Committee showed that seventy applications for membership had been secured during the year. The present membership of the branch is now 516.

In discussing the fuel problem, T. R. Deacon, Fuel Controller for Manitoba, stated: "The coal is not moving, and I think people will be very unwise not to take heed of the warning. If they don't take heed they certainly are going to freeze next winter. The outside points are going to it in a much more sensible way than the city. They are getting the coal. There will be no difficulty in burning the best western coals in any furnaces."

General impression prevailed among the members that it would be in the interests of the branch to hold more frequent general meetings, and the Executive Committee was instructed to bear this suggestion in mind.

The election of officers resulted as follows:—

Chairman:—N. W. Warren.

Vice-Chairman:—E. Parnell.

Executive Council:—F. W. Adams, M. F. Christie, T. R. Deacon, W. R. Ingram, J. E. Wildman, F. W. Drewry, W. S. Fallis, A. B. Stovel, J. W. Ackland, Wm. Martin.

Executive Committee:—W. G. Fraser, R. J. Henderson, H. B. Gordon, L. J. Rumford, D. J. Dyson, Jas. Carruthers, W. J. Fulton, G. W. Murray, L. R. Barrett, J. Brockest, L. Crossen, J. M. Thompson, F. J. C. Cox, H. L. Willson, Chas. Watson,* H. G. Love,* A. Mihalko,* Wm. Georgeson,* C. H. McAuley,* G. E. White,* Wm. McNeely.*

Transportation Committee:—W. R. Ingram, Chairman; H. B. Gordon, M. F. Christie, J. C. Macnab, H. P. Fox, E. D. Parker, G. W. McLaren, J. Minhinnick, W. J. Fulton, J. E. Wildman, D. A. Clark, D. J. Dyson, Wm. Georgeson,* A. Mihalko,* C. H. McAuley,* C. R. McTavish,* G. E. White.*

Tariff Committee:—T. R. Deacon, Chairman; C. H. Whitaker, G. N. Jackson, Wm. Martin, W. J. McMartin, E. J. Ransom, H. L. Willson, A. A. Ryley, D. W. Dingwall, A. R.

Hignell, H. R. Eade, G. W. Murray, J. A. East,* J. E. Davies,* M. Esdale,* R. H. Hutchings.*

Legislative Committee:—E. Parnell, T. R. Deacon, W. S. Fallis, A. F. Emery, D. Dingle, F. J. C. Cox, H. L. Willson, L. Crossen, W. T. Kennedy, L. J. Rumford, W. R. Ingram, C. A. Graham,* A. R. McDiarmid,* J. A. Caulder,* T. A. Potter,* Chas. Watson.*

Insurance Committee:—W. S. Fallis, Chairman; H. L. Willson, E. Parnell, J. Carruthers, M. F. Christie, G. N. Jackson, L. T. Walls, W. A. Mackay, J. Brockest, W. Hood, J. C. Macnab, A. E. Cross,* Chas. Pratt,* C. G. Robson,* H. G. Love,* T. A. Willson.*

Membership Committee:—J. M. Thompson, Chairman; J. W. Ackland, L. A. Willson, E. Reynolds, W. T. Kennedy, I. T. Peacock, W. A. Duff, G. W. Murray, L. J. Rumford, J. Menzies, W. G. Fraser, D. J. Dyson, G. H. Anderson,* G. R. Weaver,* Wm. Innis, F. M. Beatty.*

CHAIRMAN'S ADDRESS

The address of the retiring chairman of the branch, Mr. A. B. Stovel, was as follows:—

"In reviewing my stewardship of the honor you conferred upon me when you elected me chairman of the Prairie Provinces Branch last year, I shall endeavor to make my remarks as brief as possible. The chairmen of the several standing committees who will follow me will cover fully most of the activities of the branch during the year, and it is my intention to avoid repetition where possible.

"The branch has taken an active part in patriotic work. In securing subscriptions to Red Cross, Navy League, Victory Loan, etc., the branch did its part well. In fact the provincial chairman, Sir Augustus Nanton, and his able confrere, Mr. A. L. Crossen, expressed their thanks for the method followed by manufacturers in assisting employees to subscribe and seeing that they did so to the best of their ability.

"The assistance rendered their employees by many members of the branch in providing cultivated plots for war gardens was greatly appreciated by the officers of the Winnipeg Garden Show, to which the branch contributed a handsome silver cup for the annual competition. The beginning made last year is being pursued in a larger way this year.

"With a desire to assist in re-educating and finding suitable employment for returned disabled soldiers unable to follow their previous avocation, the branch, at the request of the officer commanding the Military Hospitals Commission, appointed Messrs. Wm. Martin, G. W. Murray and Lyle Crossen to represent it upon the training board of the Military Hospitals Commission. It is likely that there will be some discussion here this evening of the employment of returned men. I feel, as I have no doubt you do, that while in some cases this important problem is a difficult one, that we as large employers of labor, owe a duty to these men who have fought and shed their blood for us that it will be well nigh impossible to amply discharge. I, therefore, bespeak your most earnest consideration, sympathy and co-operation in securing for these heroes a competence at some suitable work.

"Speaking of education there is one matter to which I believe the branch might well give closer attention, and that is the commercial education course recently established by the Manitoba University at the request of this and other commercial organizations. This course necessarily started in a

*Members west of Winnipeg.

small way. Courses of lectures in bookkeeping, salesmanship, business correspondence, etc., have been given. I hold, however, that these should be extended to cover shop efficiency and cost production, and feel that the branch might well endeavor to secure something along these lines the coming season.

"The organization of the Honorary Council of Scientific and Industrial Research has already demonstrated that it is ably fulfilling the purpose for which it was created by discovering a means whereby the cheap lignite coal of south-eastern Saskatchewan may be made of greater value to western Canada. The best brains in the country for research work are associated with this Council, which will grapple with and endeavor to solve problems requiring scientific research affecting industry. The branch is represented on the local committee of the Council by Messrs. T. R. Deacon and D. J. Dyson.

The Smoke Nuisance

"I am glad to be able to report to you that the Mayor and Board of Control of the City of Winnipeg readily appreciated the difficulty, nay impossibility, of local plants complying with the requirements of the smoke law when your representatives appeared before them and requested a suspension of the law, with the result that I believe I am safe in saying that no firm which has been doing its best under present conditions to minimize the smoke nuisance has been irritated by prosecution.

"I feel strongly that not alone employers of female labor, but all others owe a debt of gratitude to Mr. E. Parnell and the members of his committee for the able manner in which they handled the question of a minimum wage law when it was before the Manitoba Legislature. In securing the passage of an Act providing for the constitution of a Minimum Wage Board to investigate conditions of labor and wages paid female workers, in place of a statutory minimum wage, as was urged by the Trades and Labor Council, this committee accomplished a great deal towards lessening industrial disputes between a large body of workers and their employers, which in turn should, and I firmly believe will, have a beneficial effect upon the whole situation.

"Efforts were again put forth by your Executive Committee to obtain some arrangement whereby, when the service of either the Winnipeg Street Railway Company's power department or the City Light and Power Department is impaired, that each would have some means of connecting up with the other, thus insuring continuous service to the users of either power. However, the engineering difficulties and the excessive cost of installing such a system is alleged to be so great as to make it almost prohibitive. I trust that some means of overcoming this may be devised in the future.

Workmen's Compensation

"Another matter to which I desire to refer is the manner in which the increase of 10 per cent. in workmen's compensation rates was handled by the branch. I want to tell you I was proud to be associated with an organization which could and did take such immediate and thoroughly satisfactory steps in opposition to such an imposition that it was removed within twenty-four hours. I want to express my thanks to the chairman of the committee, Mr. W. R. Ingram, and the solicitor of the branch, Mr. J. B. Hugg, for their efforts in behalf of our members and what they accomplished for us, and I know you will all join me in this.

"Then I would like to record my appreciation of the prompt and thorough manner in which the Royal Commission, of which our good friend, Mr. Fallis, was chairman, got out all the facts with respect to the investigation of the adminis-

tration, or rather the mal-administration, of the Act by the Workmen's Compensation Board, and rendered such a fair and complete report in record time. If we had more Royal Commissions of this calibre the people of Manitoba would, I am sure, be greatly pleased.

"Now my remarks have dealt pretty much with Winnipeg and Manitoba, but you will be glad to know that the sections of the branch west of Winnipeg are actually engaged in bettering conditions for manufacturers in that territory. Alberta sections have waited upon the Government of that province on several occasions and have secured the passage of a Workmen's Compensation Act that is a great improvement over prior enactments in that province, in that it overrides the common law right of an injured workman or his dependents to sue for injuries received. The Act provides that the insurance shall be covered by the Government and benefits to injured workmen paid by the Government Board, thus eliminating any friction between workmen and employers as to what benefits are due them. The Government promised that there would be no increase in premium rates, but rather that a decrease might be looked for in the future.

"As a result of representations made by the manufacturers in Alberta, the Government amended the drastic Factories Act on the Statute Book in that province to afford relief to industries engaged in production of war necessities, and I might say that the Act contains many provisions that are altogether unfair and unworkable, so much so that this has been recognized, and there has been practically no prosecutions thereunder.

"I am also pleased to be able to say to the meeting that the sections west of Winnipeg have taken very active interest in many matters of extreme importance to them locally, and, in my opinion, have amply justified the practice that was followed of establishing these local sections of the branch. I look for much benefit from these organizations.

More Frequent Meetings

"There is one thing in connection with the conduct of the affairs of the branch that has impressed itself upon me during my term of office, and I would like to make a suggestion for the incoming Executive. While the active work of the branch must necessarily be conducted by the committees appointed by the membership at the annual meetings, and while there is no doubt utmost confidence placed in these gentlemen, as evidenced by their election, still I believe that a marked improvement might be made if there were more frequent meetings of the general membership of the branch. Whether or not these should be held at regular intervals or whether they should be called when matters of importance crop up is an open question, but I do feel that had I not been connected with your Executive there were times when I believe I would have at least wondered what the Association was doing, or whether or not it was doing all that it could in connection with matters of importance. It is true that our secretary issues a circular each month, thus keeping the membership informed of what has been done, but my idea is that the membership should be consulted more as to what should be done at the time. Therefore, I suggest that the incoming Executive hold more frequent meetings of the general membership of the branch than has been the custom in the past.

"Permit me to say a few words regarding the harvesting of this year's crop, and our interest in that undertaking. No plans to secure farm labor for the 1918 harvest have yet been made, that I am aware of, unless some plan evolves from the man-power registration of June 22, but any plan based on the man-power registration will be late in going into effect, the end of August at the earliest. Harvest help

will not be available from the east and south as in former years, for reasons that are obvious. The above conditions point to the only remaining source of supply, the men and women of the towns and cities who can be spared to help in the harvest for varying periods during the season. They should be found well in advance of harvest, and an organization representing the business and industrial interests of the towns and cities might work in co-operation with the agricultural organizations in arranging that help so supplied might be made use of most effectively.

"A joint meeting of the executives of the industrial business and agricultural organizations might be held at an early date to consider the whole problem of harvest help for 1918.

"The most important point in connection with securing and sending out enough help is to get the work started early and carry it on in co-operation with the farmers' organizations; find out what men can be spared and when, and arrange to get them to the place where they may be most effectively employed. I trust that if steps are taken in any way along the line I have suggested that each and all of our members will render every assistance within their power.

The Effect of the War

"I feel that I cannot close my remarks without some reference to the terrible world-wide war in which Canada is performing its part nobly. While the war has had the effect of creating abnormal conditions and has made the conducting of industry a difficult problem, you will, I think, all agree with me that had we been told before the outbreak of the war that such a thing was possible or even probable, and that after over three years of continuous fighting Canada would have found itself in the strong position that it occupies to-day, not alone at home, but abroad, you would have said that it would have been impossible. Canadian soldiers have shown their worth on many battlefields, and Canada has attained a position that any country might well be proud of. But without any desire to boast, I think that great credit is also due to the men of Canada engaged in industry who have kept the wheels turning, under difficulties unforeseen and continually changing from day to day.

"One of the difficulties, and not by any means the least, has been the question of labor, and I think the public generally, at least in Winnipeg, after the disturbance in civic departments, now realize what some of you gentlemen have had to contend with during the past three years. Realizing this, I believe that the public will be far more sympathetic towards employers in the future. Then, too, I trust and hope that the basis of the settlement with Winnipeg civic employees, viz., conciliation and arbitration, will be more generally adopted by all labor organizations, thus avoiding the bitterness that has marked many industrial disputes in the past, because experience has shown that where the above method is followed each side of the dispute recognizes the mistakes of the other, and usually by the time negotiations are closed there is very little, if anything, left to strike about.

"Before I take my seat I wish to thank the chairmen and various members of the committees, that have acted from time to time, for their hearty co-operation and assistance. I confess that when you elected me chairman I felt that the task that you had imposed upon me was a very big one, but you have all done so much to assist me that I have found my duties as your chairman a great pleasure. In my humble opinion the work of the Association in western Canada the past couple of years has progressed wonderfully by the spirit of co-operation, as evidenced by the support which the branch has received throughout the Prairie Provinces. We have laid a splendid foundation, and when normal conditions return and industry expands in this territory,

as I am sure it will do, I look forward to the time when the Canadian Manufacturers Association will possess a great influence in this territory.

"In making this report I feel I would be very lax indeed if I did not make special reference to the very valuable work carried on by the secretary, Mr. Carpenter. I have at all times found him most courteous, and he has rendered splendid service. He seems to be continually on the watch for matters of interest to our Association, and followed up any work entrusted to him in an expeditious and thoughtful way. I do wish to express my sincere appreciation of his work."

REPORT ON TRANSPORTATION

W. R. Ingram, chairman of the Transportation Committee, in his report, said:—

"After extended hearings throughout Canada held some two years ago the Board of Railway Commissioners on May 18, 1918, issued general order No. 230, increasing the tolls payable by shippers of non-competitive freight switched by a terminal carrier from the railway enjoying the line haul on freight classifying 6th class and higher from a minimum of \$1.50 per car to a minimum of \$2.50 per car, the rate per 100 lbs. remaining at ½c. without any maximum. The order further provides that railways interswitch carload traffic for team-track delivery. This settles a longstanding dispute in favor of shippers. In the case of team track delivery shippers, however, must pay a toll of 1½c. per 100 lbs., subject to the minimum weight of the line carrier's tariff. The distance that freight will be switched under this charge is limited to three miles from the point of interchange with an additional charge of 50c. where the distance exceeds three miles but does not exceed four miles. Where the intermediate carrier is employed between that enjoying the line haul and that performing the terminal switching, the order provides the shipper shall pay \$1.50 per car where the intermediate carrier's switch does not exceed three miles, and \$1.85 where it exceeds three miles and does not exceed four miles.

Demurrage Rules

"The Canadian Freight Association applied to the Railway Commission for an increase in demurrage charges from \$1 to \$3 per car per day and for permission to apply such increased charge on Sundays, legal holidays and half-holidays. Shippers' rights under what is known as the 'bunching rule' were seriously impaired. The branch objected strenuously to the latter two changes in the rules, but agreed to demurrage charge of \$1 per day for the first and second day beyond the free time limit and \$3 for the third and each succeeding day.

"The Railway Commission, by its general order No. 201, effective August 1, 1917, authorized the following scale of demurrage charges:—

1st day after free time limit	\$1 00
2nd day after free time limit	2 00
3rd day after free time limit	3 00
4th day after free time limit	4 00
5th and each succeeding day	5 00

"The Commission held that no charge should be made for Sundays or legal holidays, but allowed a charge for half-holidays. The Commission disallowed the proposed change in the bunching rule.

"The Association seized the occasion of the revision of these rules to again urge upon the Commission the desirability of authorizing average or reciprocal demurrage. In dealing with this request the Commission held that it would be unwise to experiment with any new demurrage schemes under present

abnormal conditions, and postponed consideration of average demurrage rules until after the war."

In referring to the demurrage of 15 per cent. in the freight rates recently, the speaker explained that it was a measure granted to cover the duration of the war only. He predicted that an increase in cartage rates for Winnipeg might be one of the results of the recent strike. Mr. Ingram further reported that his committee had secured a reduction in the proposed increase in the charge for ice supplied perishable freight in western Canada, to \$3.60 per ton instead of the proposed \$4. The former charge was \$3.

LEGISLATIVE COMMITTEE

E. Parnell, chairman of the Legislative Committee of the branch, submitted a résumé of its activities during the past year.

Last year the Board of Valuation and Revision, at the request of the Winnipeg City Council, made a report upon assessment and taxation in Winnipeg. The principal recommendation was that a form of income-tax be substituted for the present business tax. At the last session of the Legislature the city applied for authority to collect an income tax. However, their application was not acted upon definitely, the matter being allowed to stand over, pending a study of the subject and report to the Legislature by a joint committee from various business organizations of the city government, appointed by the Provincial Treasurer. When this joint committee commences its operations the branch will be afforded an opportunity of representing the views of its members.

Minimum Wage Bill

Your committee spent much time upon the consideration of this matter. Numerous conferences were held with delegates from the Trades and Labor Council and the Women's Labor League to discuss, and, if possible, arrive at some solution of the problem of a fair living wage for female workers. Repeated efforts were made to have the matter treated as a Dominion question, so that any legislation might apply equally to all employees throughout the Dominion. Unfortunately, it was found impossible to arrive at any satisfactory conclusions, the representatives of the above organizations stating that they preferred to go direct to the Manitoba Government and withdrew from the conference.

Believing that it was imperative that such an important matter should, if possible, be harmoniously settled by agreement between the workers and employers, your committee again requested the representatives of the Trades and Labor Council to meet with them and consider the subject further. After meetings, lasting over two days, representatives of the Trades and Labor Council withdrew from the conference, stating that they were not prepared to accept anything less than their first demand.

Subsequently an Act was passed setting up a Minimum Wage Board of five persons, two representing workers, two the employers, one of each to be a female, and an independent chairman. Your representatives on this board are: Mrs. E. M. Nash and Mr. E. Parnell. Female workers are represented by Miss Flett and Mr. Winning, and the board is presided over by Dr. McMillan.

This board has entered upon its duties and has already held several meetings.

Uniform Provincial Legislation

A draft of a bill to be submitted to the Provincial Legislature for the formation of a board of commissioners in each province to draft uniform laws was endorsed by your Executive, but it was held that at least one of the commissioners

in each province should be a business man and, further, that such commissioner should at once give attention to such matters as Factories Acts, Boiler Acts, Workmen's Compensation Acts, etc., directly affecting the manufacturing industry of the country.

Anti-Injunction Law

Members have no doubt noticed from the public press that an agitation is being made by certain organizations for a Dominion law prohibiting judges from issuing injunctions restraining picketing in the case of industrial disputes.

This is a matter in which every member of the Association has a direct interest, and the Legislative Committee, to which the matter was referred, has given the subject careful attention, but considers it unwise to take any action until the matter assumes more definite shape.

Business Tax Act

The branch was favored with a meeting with the Provincial Treasurer, Hon Edward Brown, when he explained that it was necessary to raise an additional one million dollars yearly to meet the running expenses of the province, and that he proposed to introduce legislation at the next session of the House providing for a tax on amusements and a tax on vacant farm land, part of the fund derived from such taxation to be loaned to farmers for the purpose of cultivating vacant land, thus increasing the production of the province; and a tax on all business conducted in the province, the suggested tax in the cities being 10 per cent. for each department of a business and \$1 for each employee.

While your representatives stated that manufacturers would be glad to bear their fair proportion of any taxation that was required to conduct the affairs of the province, strong objection was taken to manufacturers and wholesalers being taxed in the same manner for the reason that the amount of business done by wholesalers per employee is many times greater than that of the manufacturers.

Your committee, after reviewing the serious position in which manufacturers find themselves in this province, and the fact that they were not to be benefited by the proposed legislation, it suggested that, if the manufacturers are to be taxed at all, the tax should be a nominal one and that it should not exceed the following: Under 50 employees, \$10; 50 to 99 employees, \$20; 100 to 199 employees, \$30; 200 to 299 employees, \$40; 300 and over, \$50.

However, while the amusement tax was enacted and a tax placed on vacant land the proposed business tax was not placed on the Statute Book.

The committee desires to express its appreciation of the services rendered by the Association's solicitor, J. B. Hugg. His untiring efforts and courteous manner have been of very great benefit to your committee.

I cannot close this report without expressing my personal appreciation of the help and efforts of your secretary and staff in the performance of my duty as chairman.

The British Columbia Manufacturing Co., Ltd., of New Westminster, have leased from the Provincial Government a portion of the Indian Reserve on Lulu Island as a site for a new sawmill and box factory. This mill is being built to take care of the British Columbia Manufacturing Company's growing export business, and a separate company under the name of Export Manufacturers, Limited, has been organized to handle this business. Railway ties, ship timbers and box lumber will be the principal output of the new plant, which is now under construction.

wasteful handling or dishonesty. Your purchasing agent should also have access to these records if he is not to overstock on one line and run short on others. You can hardly expect the factory to keep up with the sales if it has to mark time periodically because someone forgot to say that you were "out" of something.

It is not uncommon to find a company, with a finished stock worth thousands of dollars, making frantic and costly efforts to fill an order for a line that does not involve one hundred dollars. You should, therefore, keep a perpetual inventory of your finished stock also—each day charge up the product as manufactured and credit the shipments. The balance will show the factory how it stands at any time in regard to filling the demand for any line.

It is readily seen, then, that co-operation plays a paramount part in the success of your business. The rate of your turnover depends entirely upon the amount of harmony which exists between your purchasing agent, factory superintendent and sales-manager. In a like manner your labor costs will be high or low according to the consideration shown to the help. If you believe in a large number of hands at the average wage you will find an endless army willing to spend the required time each day in your plant, and many will strive to appear as active as desired. But there is the widest gap between activity and results. The group system on a time basis is the most expensive method of payment.

On a Piece-Work Basis

There are very few jobs in any factory which are not of a purely routine character and each one of these duties can be paid for on a piece-work basis at a greatly reduced cost to the company and increased pay to the worker. It is fully recognized that the average employee is not in favor of the straight piece-work system, but that is not unnatural considering the way in which it has been misused. Without professing to be a prophet, it may be safely said that the days of the straight piece-work plan are numbered, especially on seasonal occupations. The workers are looking for a guarantee of some kind. They do not relish taking a chance on unstable rates and the manufacturer's promise of steady work. On the other hand, many manufacturers feel that the piece-work plan does not sufficiently reward the best workers or encourage the others. Let us take two piece-workers who are on the same class of work. One averages, say, \$25.00 per week, while the other's pay hovers around the \$20.00 mark. It is obvious that the first man is 25 per cent. more efficient and, therefore, more valuable to the company; but under straight piece rates he does not receive any special reward for his extra effort although the overhead expense on his output is considerably less. The proper method would allow more proportionately for the larger production and thus encourage others to improve. For instance, if a man knew that he would receive 10 cents each for an output of fifty pieces per day but only 9 cents each for a smaller output, it is readily seen what effect this incentive would have. The bonus or premium plan of payment acts as a constant stimulant to production.

If your labor costs are high you should have time and motion studies made of all work performed in your factory. This does not mean that a stop-watch is to be held over the head of every workman. On the contrary, the time-study man must do more thinking than timing. He is there to determine more economical methods of manufacture, but he must also improve the working conditions for the help. In one factory the labor costs were cut 40 per cent. and yet the wages are now 30 per cent. higher than formerly.

A competent time-study man can save you several times his salary and he should, therefore, be chosen with care. He

should be familiar with the different operations throughout your plant so that his suggestions will carry weight. He should be tactful so that the employees will work in harmony with him. He should be a man who is not easily influenced so that he may judge impartially. He should be patient so that he will not be given to rushing things and thus create a bad impression. He should possess an analytical and synthetical mind so that he will not jump at conclusions. You may not locate this man to-day or to-morrow but you may rest assured that, if proper care has been exercised in selecting your help, you will find him already in your employ.

Working Conditions

Start him observing the workmen individually. Is his position at the machine or bench one which will tire him easily? Is it necessary for him to assume an awkward position owing to a poor arrangement of the machine or bench? Is the light so dim as to cause eye-strain and thereby affect the quantity and quality of his work? Is the ventilation, temperature and humidity of the room such as to reduce physical and mental vitality? What periods of the day give the greatest production and the lowest? What length of rest periods should be given to reduce the fatigue factor and thus maintain a higher average of production? What is the difference between the different men's methods? Do they always do the same thing in the same order and in the same manner? Determine the reason for every movement. If it only takes ten seconds and is performed four hundred times a day a man may lose over an hour without knowing it. It is the sum of the so-called trifles which will cut your costs in half and increase the workmen's wages proportionately.

Now comes your material. Is it in proper condition when it comes to the operator? Is it placed in the most convenient position for machine and operator? Can the effort, which is now required to place the completed work aside, be reduced? How many delays were observed and what were the causes? Trace the material from hand to hand. Every minute lost increases your overhead.

What about the different machines? Can the work be done in multiple? Can an automatic feed be arranged? Can the speed of the machine be increased without affecting the quality of your product? Can any operation be subdivided or combined with others to advantage? It may take a month to solve one of these or similar problems, but if the possible saving is worth while the time is well spent.

The Condition of Tools

Then there are your tools. What condition are they in? Are they antiquated or modern? Do they cause an unusual amount of fatigue and thus curtail production? Are the tools arranged so that the workman does not have to fumble to pick them up? Can any two or more tools be combined in one so as to reduce the number of times the workman has to pick up and replace them? Other questions will present themselves as the time-study man proceeds. A report on each investigation should be placed on file.

It is apparent, then, that with a definite knowledge of the productive capacity of every hand and machine, the co-operation of your executives and the support of your employees, a greater output, at less cost, simply hinges on your ability to harmonize their efforts. This can be accomplished by a production control board similar to the one shown in the accompanying diagram. It is a reproduction of one now in use in a Toronto paper-box factory, but it can be modified to suit almost any industry. The main point is to keep every machine and employee busy by "feeding" them steadily and preventing congestion.

When the factory order is issued a sectional work ticket, on which the different operations are listed, accompanies it. A spiked button on which is printed the actual order number is placed on the board opposite the machine or bench to which the work goes first. As each operation is completed that section of the work ticket is detached and returned to the factory office when the order button on the production control board is moved opposite the next machine.

At the bottom of the production control board it will be noticed that a short description of each order is given together with the time at which the work is started and finished by each machine. By checking the different sections of the work tickets with this board as they are returned the production man can see at a glance how every order is progressing, what each machine is working on, when it will be through, what it is to do next and what is more important, whether the machines are working in harmony with one another, thus preventing idleness or congestion.

One of your factory clerks can devise such a board to suit your particular needs and any up-to-date stationer can furnish the numbered buttons and the sectional work tickets. Within a month you can start to control your production from one point—the factory office—instead of trusting to luck and blaming your foremen.

In next month's issue will be shown how your office can assist you to successfully combat your rising costs.

Serving Their Employees

How the Rudd Paper Box Company, Toronto, are Trying to Make Things Pleasant for Their Workpeople

Recognition of human interest in industry is one of the latest developments in Canadian industrial life. In a modern factory the employees are no longer considered mere parts of a machine—the means of perpetual motion during working hours,—but vital parts of an organization that are essential to its well-being and progress. Many up-to-date employers are also paying much attention to the interests of their employees during their off-work hours. Especially is this the case in connection with the mid-day recess. The accompanying photograph is one of several instances. It is typical of what is

going on in the industries, and is an earnest of what is going to happen in the near future.

The Rudd Paper Box Company, 374 Richmond Street West, Toronto, have installed a very modern dining and rest-room in their factory. It provides all that is to be desired by girls during their lunch hour. It has a seating capacity of 75. The average number of diners is 55 and 60. A thoroughly efficient cook is in charge, and fresh tea and soup is provided at three cents, inclusive. This does not begin to pay the costs, but it is only natural that the employees should want to pay something for what they receive. The girls who use this dining-room bring their own lunches and augment them with the soup and tea.

Freedom During Lunch Hour

While there are many differences of opinion as to what should be done for their employees, manufacturers are all agreed that there should be a minimum of restriction and regulations during lunch hour. This Company has adopted this viewpoint, and provided everything for the freedom and comfort of the girls. After lunch they can use the writing desk at their disposal or the magazines and papers that are provided. The table arrangements are very suitable. Instead of the long tables which preclude comradeship among the girls this company has provided tables that seat four people. In this way the girls can gather together in their little personal cliques and enjoy the comforts that go with a proper rest hour.

Speaking of this work with a representative of *Industrial Canada*, one of the heads of the firm declared that the march of events in industry demand a different viewpoint and attitude toward employees. "We see the importance of coming into personal contact with our employees and doing everything possible towards improving their conditions and making the factory attractive. Contented employees mean much for the success of an industrial organization."

Electric Smelting

Shortly after Dr. Eugene Haanel, the present Director of the Mines Branch, became connected with the public service at Ottawa, he was authorized to make an investigation into the question of electric smelting. The investigation was conducted in a most thorough and scientific

manner, and its results were published in a report which has become a standard work in all technical libraries which aim to keep on their shelves up-to-date works upon modern industrial processes. At the time when this investigation was made, the general opinion prevailed that, while the investigation was interesting, the time was very distant when electric smelting would be carried into practical operation in Canada. It was regarded as more or less of a fad; by some newspapers as somewhat of a joke. It is, therefore, worthy of special mention that the fruition of the efforts which were made in connection with that investigation has arrived and that electric smelting is now in full operation in Canada. Nothing could better demonstrate the usefulness of such scientific investigations when properly carried out.—Sir Clifford Sifton.



Rudd Paper Box Co.'s Employees' Lunch and Rest Room



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VICTORIA



NEW ZEALAND

Making Ten Blades Grow Where One Grew Before

TO supply Canada from East to West with the luxury of a perfect shave was no mean task for the Gillette Razor, **MADE IN CANADA.**

But War has widened the demand on Canada, and to-day, this very morning, men in the British Isles, in India, in Australia, in Africa are shaving swiftly, perfectly and happily with the keen, rigid edges of Gillette Razor Blades, **MADE IN CANADA.**

The British and Canadian soldiers in France and Flanders shave with the Gillette,
MADE IN CANADA.

Gillette Safety Razors

Jewelers, Druggists and Hardware Dealers can show you assortments of Gillette Sets at \$5.00. Special Military Sets for the boys "over there" and for the boys going over.



IT would seem a man-sized problem to speed up production to meet a world-wide, *as well as* a Dominion-wide demand for Gillettes, especially for Gillette **BLADES**, which can only be produced in their unrivalled perfection under expert care.

But Canada and her manufacturers have learned to meet unexpected demands with grim determination, and in solving her difficulties, one by one, as they arise, are building strongly for the future.

Necessity breeds invention, and in developing ways and means to make ten blades grow where one grew before, we have discovered new and improved processes.

The keen, hard edges of Gillette Blades hold their perfect condition whether bought in New Zealand, Fiji, Ceylon, Singapore, Tasmania, or where they are **MADE, IN CANADA.**

YOU should be enjoying the economic luxury of a clean Gillette shave every day. Decide to-day to become one of the Empire's Gillette enthusiasts.

Do you know a man in khaki who hasn't a Gillette? Don't let him envy the men around him. **YOU** see that he is supplied.



CAPE COLONY



INDIA



STRAITS SETTLEMENTS



Gillette Safety Razor Co.
of Canada, Limited

Office and Factory:

65-73 St. Alexander Street

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 E. C. Fox Wm. Davies Co., Ltd. Toronto, Ont.
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 A. H. Brittain Maritime Fish Corporation, Ltd. Montreal, Que.
 Ross McMaster Steel Co. of Canada, Ltd. Montreal, Que.
 Henry Bertram John Bertram & Sons Co., Ltd. Dundas, Ont.
 A. D. Huff Laurentide Co., Ltd. Montreal, Que.
 F. C. Daniels Dominion Textile Co., Ltd. Montreal, Que.
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 Norman Boyd Gutta Percha & Rubber, Ltd. Toronto, Ont.
 Robin Boyle Provincial Stone & Supply Co., Ltd. Toronto, Ont.
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(List continued on page 242.)



Champion "X"
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Price 75c.



Champion
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Price \$1.00.



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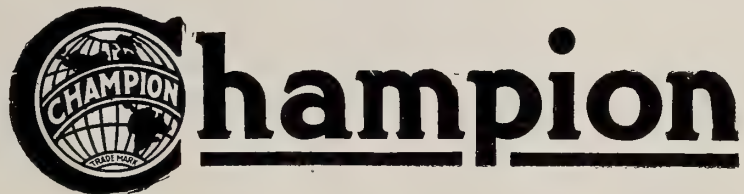


Champion
"Heavy Duty"
for medium-
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Price \$1.00.

Your Gasoline Motor or Engine is only as dependable as are its Spark Plugs

One bad spark plug lessens the efficiency of your entire motor without decreasing your cost of fuel.

Therefore, to obtain the maximum power from each gallon of fuel, you must have dependable Spark Plugs of a type best adapted to the requirements of your engine.



Dependable Spark Plugs

have been developed for every type of Automobile, Truck, Motor Boat, Motor Cycle, Tractor and Farm Engine.

The great majority of all Canadian gasoline motors are Champion equipped. Such is the tribute that has been built on dependability.

Be sure that "Champion" is on the porcelain—it guarantees "Absolute Satisfaction to the user, or free repair, or replacement will be made."

Auto Supply Dealers or Garages can supply you.

**Champion Spark Plug Co.
of Canada, Limited
Windsor, Ont.**



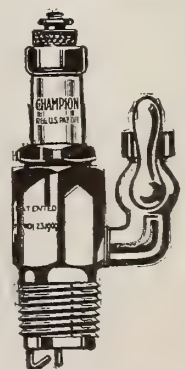
Champion "O"
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Cars. Price \$1.00.



Champion
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Price \$1.00.



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John Bain	Bain Wagon Co., Ltd.	Woodstock, Ont.
H. B. Callendar	Louden Machinery Co. of Can., Ltd.	Guelph, Ont.
Howard Smith	Howard Smith Paper Mills, Ltd.	Montreal, Que.
R. E. Jamieson	Consolidated Rubber Co., Ltd.	Montreal, Que.
Eugene Tarte	La Patrie Publishing Co., Ltd.	Montreal, Que.

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S. H. Chapman	Ontario Wind Engine & Pump Co., Ltd.	Toronto, Ont.
T. Boyd	Thomas Boyd	Winnipeg, Man.
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G. F. Benson	Canada Starch Co., Ltd.	Montreal, Que.

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H. J. Waddie	Canadian Drawn Steel Co., Ltd.	Hamilton, Ont.
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(Chairman)		
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(Secretary)		

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(Chairman)		
G. E. Carpenter	503 Northern Crown Bk. Bldg.	Winnipeg, Man.
(Secretary)		

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H. R. Thompson	Box 93	Amherst, N.S.
(Secretary)		

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(Chairman)		
W. P. Hughes	113 Board of Trade Bldg.	Montreal, Que.
(Acting Secretary)		

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(Chairman)		
Raoul Renault	317 St. Joseph St.	Quebec, Que.
(Secretary)		

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(Chairman)		
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(Secretary)		

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Wm. McNeill	Western Canada Power Co., Ltd.	Vancouver, B.C.
(Chairman)		
Hugh Dalton	704 Board of Trade Bldg.	Vancouver, B.C.
(Secretary)		

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Chas. M. Thompson	Brantford Roofing Co.	Brantford, Ont.
(Secretary)		

Note.—Mr. G. E. Mosser, Bird & Son, Hamilton, was appointed by Asphalt Roofing Mfrs. as representative to the Executive Council.

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Boot and Shoe (Montreal)

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E. C. Coleman	Martin Corrugated Paper & Box Co.	Toronto, Ont.
(Secretary)		

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Wm. Inglis	John Inglis Co., Ltd.	Toronto, Ont.
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C. R. McCullough	Ontario Engraving Co.	Hamilton, Ont.
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Fertilizers

W. A. Freeman	W. A. Freeman Co., Ltd.	Hamilton, Ont.
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Jas. Litster	Litster Pure Food Co., Ltd.	Toronto, Ont.
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L. G. Amsden	Consolidated Optical Co., Ltd.	Toronto, Ont.
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Gold and Silversmith (Quebec)

Jam

W. R. Drynan	Dominion Cannery, Limited	Hamilton, Ont.
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Carl Riordon	Riordon Pulp & Paper Co., Ltd.	Montreal, Que.
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J. H. Wilson	M. J. Wilson & Sons	Ottawa.
(Secretary)		

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J. O. Thorn	Metallic Roofing Co. of Can., Ltd.	Toronto, Ont.
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F. M. Tobin	Excelsior Life Bldg.	Toronto, Ont.
(Secretary)		

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G. C. H. Lang	Lang Tanning Co., Ltd.	Kitchener, Ont.
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Woollen

T. S. Caldwell	Boyd-Caldwell & Co., Ltd.	Lanark, Ont.
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(Secretary)		

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How many *working* hours do you buy?

Do you know the difference between the actual productive hours and the non-productive hours of the valued men in your plant?

Many a good firm has been sunk through insufficient cost data. On the other hand, many firms burden the good ship Business to the decks with a cumbersome cost-keeping system.



International Cost Recorder
"Made in Canada"

This recorder will tell you the actual number of productive hours put in on the work going through your plant. It will also show you the amount of time you are paying for which is not employed.

Being mechanically accurate it will prevent a forced balance of the working time of any department or employee.

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It will give your clerks a convenient, legible, accurate record from which to invoice as well as to make up the payrolls. It will prevent time losses, prevent errors in records, protect your labour costs, furnish a double check on your payroll, it will locate the efficient workers and prevents all disputes with workmen as to their time.

Internationals furnish the most complete and economical Time, Payroll and Cost Systems, because they are equipped with patented devices which mechanically enforce the proper carrying out of the system.

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- they increase the efficiency of every workman, and every department.
- they create confidence between employees and management.
- they reduce clerical work in your payroll and cost departments.
- they cut out manual methods of payroll cost keeping.
- their employees make their own records in their own time.
- closer supervision is possible.
- payroll disputes are cut out.
- discipline is promoted.
- they save money.
- they save time and time is recognized in to-day's business as the great ally of allies.

They are fully automatic because :

- by the use of the two-color ribbon it is necessary only to check the records appearing in Red, which denote all late "ins" and early "outs," bonus or over-time and all irregular entries, saving time in your payroll accounting.
- by the use of the Automatic "in" and "out" device the position of the card or payroll slip is automatically changed, assuring all records being printed in proper sequence. This cuts out the necessity of having someone on hand to manually shift the recorder, and guards against the possibility of someone forgetting these changes.

The work of compiling your payroll is 95% completed—and with indisputable time records—when the sheets are taken from the recorder.

Price \$100.00 and up. Our latest folders gladly sent on request.

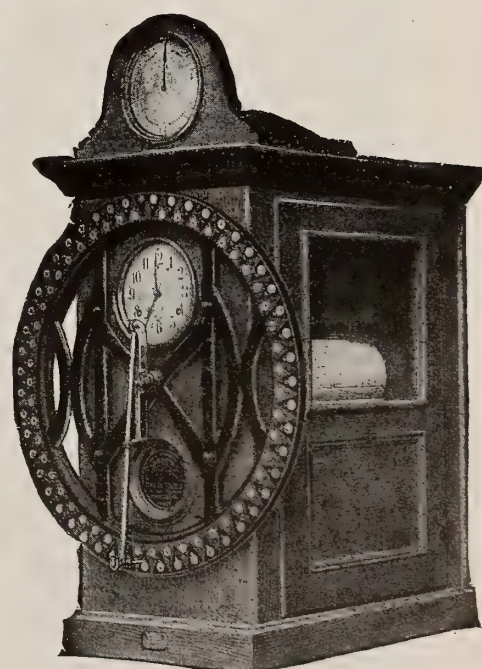
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TIME RECORDER DIVISION

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Glass Enclosed Dial Recorder—Visible Records

New Interswitching Order

Important Regulations Issued by the Board of Railway Commissioners Are Now in Force

The following order in the matter of interswitching of freight traffic has been issued by the Board of Railway Commissioners for Canada:—

Under the authority conferred upon it by the Railway Act, the Board hereby rescinds its order No. 4988 (General Order No. 11), dated the 8th day of July, 1908, and doth order and declare as follows:—

1. For the interpretation, application, and operation of this order,—

(a) "Interswitching" means the movement of freight in cars between the unloading or loading tracks of one carrier, hereinafter called the "terminal carrier," and the point of interchange with another carrier by whom, singly or jointly with a further carrier, the said traffic has been carried from its point of shipment or is to be carried to its destination, hereinafter called, singly or jointly the "line carrier," both the terminal carrier and the line carrier which interchanges with the terminal carrier being subject to the jurisdiction of the Board; the said movement being performed with or without the aid of an intermediate carrier whether subject or not subject to the jurisdiction of the Board, hereinafter called the "intermediary."

(b) The "interchange" means the junction between the terminal carrier and the line carrier, or between the terminal carrier and the intermediary, nearest to the point of loading or unloading of the car.

2. This order does not apply,—

(a) To tracks used by the terminal carrier for the transfer of freight between cars and its freight warehouse, or for the purpose of transshipment from car to car, nor to tracks otherwise set apart for its own working purposes, except team tracks;

(b) To joint movements which both begin and end in the same terminal or group of terminals or adjoining switching districts;

(c) To cars which, having been once properly interswitched for unloading, are reconsigned for unloading elsewhere within the same terminal or group of terminals.

3. Subject to the provisions of section 14, carriers shall at all times, according to their powers, furnish an interswitching service equal to the service accorded their own traffic at all points where interswitching facilities are, or may hereafter be, provided, under the circumstances and at the tolls herein prescribed;

Provided that no terminal carrier or intermediary shall be obliged hereunder to make any movement exceeding the distances herein specified at the tolls herein prescribed, and that the said distances be irrespective of the location of the interchange and of yard limits or boundaries.

4. The toll of an intermediary subject to the jurisdiction of the Board shall not exceed, irrespective of weight, three dollars per car for any distance within and including three miles, or three dollars and fifty cents per car for any distance exceeding three miles to and including four miles.

Private Sidings.

5. If the traffic is loaded or unloaded upon private sidings connecting with the railway of the terminal carrier, or directly from or into an industry, elevator or yard abutting upon its tracks (commonly known as industrial sidings), or in any public stock yard, the toll of the terminal carrier shall not exceed one cent per 100 pounds for the actual weight thereof, subject to the minimum weight of the line's carriers tariff, for any distance within and including four miles from the interchange; except that the terminal carrier shall be entitled to a minimum charge of three dollars per carload of traffic included in the seventh, eighth and tenth classes of

the Canadian Freight Classification, and five dollars per carload of all other traffic.

6. The toll of the terminal carrier upon all traffic other than that referred to in section 5, including traffic to or from team tracks, shall not exceed two cents per 100 pounds for the actual weight thereof, subject to the minimum weight of the line carrier's tariff, for any distance within and including four miles from the interchange; except that the terminal carrier shall be entitled to a minimum charge of six dollars per car.

7. Not less than the following proportions of the tolls herein prescribed shall be absorbed in the rate of the line carrier and the remainder shall be an addition thereto:—

(a) One-half of the tolls charged by the terminal carrier under section 5 as qualified by section 9.

(b) Of the tolls prescribed in section 6, one-half of the tolls permitted under section 5, as qualified by section 9, as if the movement were to or from private sidings.

(c) One-half of the herein prescribed or lower tolls of each intermediary, if any, whether subject or not subject to the jurisdiction of the Board.

Provided that the line carrier may, unless its tariff rate is lower, charge and collect twelve dollars per car for its haul between the interchange and the point of shipment or destination when by reason of such absorption its line charges would otherwise be less than that amount.

Tolls Not to be Exceeded.

8. The appropriate tolls hereinbefore prescribed shall not be exceeded for the distances herein specified, in each direction, for the movement from and the return to the line carrier of so-called off-line transit traffic, and the line carrier shall be subject to the absorption provisions of section 7 only when its through rates are the sum of its published rates to and from the stop-over point.

9. If an extra car, commonly known as an idler, is used solely to take care of an overhang of long articles loaded on an open car, it shall be charged by the terminal carrier not more than two-thirds of the herein prescribed appropriate toll for the minimum weight of the line carrier's tariff, except that the terminal carrier shall be entitled to a minimum charge of three dollars per car. If interposed between two cars in the same shipment to protect an overhang from each the idler shall be charged for once only.

10. No charge shall be made for the accessory interswitching of the empty car. If the car is loaded in both directions the interswitching toll shall be charged for each movement.

11. Subject to the provisions of section 14, nothing herein contained shall prevent the line carrier from absorbing the entire toll or tolls charged for interswitching competitive traffic, provided that the traffic and movements so treated are clearly defined in its tariffs.

12. Traffic to or from the United States shall be subject to the provisions of this order at the point of shipment or destination in Canada.

13. If an exceptional rate is published to apply to or from the tracks of the carrier line only, the ordinary rate which includes the right of interswitching shall be plainly indicated in the same schedule, and the latter rate shall not exceed the former by more than the appropriate toll herein prescribed for the interswitching service.

14. Except as hereinafter provided, the tolls herein prescribed shall not apply to deprive the initial carrier of the line haul by a reasonable route of traffic loaded or to be loaded on its railway, including sidings connecting therewith, provided it furnishes at the destination, itself or through its connections or by interswitching, the same delivery and facilities as the competing carrier at no greater charge.

If a car is expressly ordered by the shipper to be interswitched to another railway, notwithstanding that the initial

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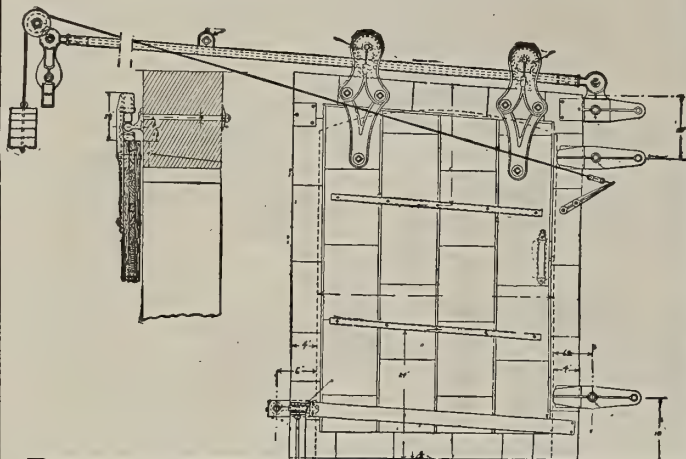
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Workingmen's Houses, erected by the Brown Brass and Copper Co., New Toronto; using only Stucco Board inside and outside on studding; plastered on interior and stuccoed, shingled and clapboarded on Stucco Board on exterior, giving cozy, home-like effect.

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carrier can furnish the services as above provided, the said initial carrier may, in lieu of the tolls otherwise prescribed herein, charge and collect its ordinary published tariff rate to the interchange, which rate shall be an additional charge against the shipment.

Provided, however, that if the said initial carrier fail or neglect to furnish the shipper with a car within forty-eight hours after it has been requested, or should through movement by the route of the initial carrier be embargoed, the shipper may require the initial carrier to accept and place, and the said carrier shall so accept and place, an empty car of any other carrier, in which case the movement of the empty car in and the loaded car out shall be effected under the provisions of sections 10 and 5 or 6, as the case may be.

The schedule to give effect to this order shall be published and filed to come into force on the first day of July, 1918.

H. L. DRAYTON,
Chief Commissioner.

Westbound Freight Rates

Order of the Board of Railway Commissioners in the Matter of Westbound Transcontinental Freight Rates

Following is the text of the general order of the Board of Railway Commissioners in the matter of westbound transcontinental freight rates, dated June 29, 1918:—

Whereas the westbound transcontinental freight rates on specific commodities from eastern Canada to destinations in British Columbia, recognized as Pacific Coast terminals, have been in the past, and are now, lower than the regular scale of rates under the Canadian Freight Classification, and the said commodity rates were definitely related to the rates on the same or similar commodities shipped from the eastern States of the Union to Pacific Coast points, including those in British Columbia, until March 15th, 1918, when the last mentioned rates were increased without corresponding increases from eastern Canada;

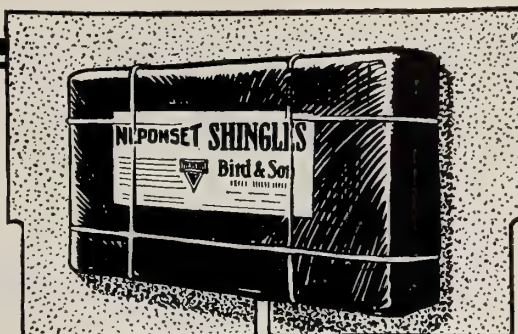
And whereas the Director-General of the United States Railroad Administration has ordered the United States carriers to increase the rates which were in effect from the eastern States immediately before June 25th, 1918, by twenty-five per cent., effective from that date, and because of the competitive character of the traffic it is expedient to continue at least the equilibrium existing before March 15th, 1918—

It is ordered that the railway companies in Canada engaged in the said westbound transcontinental traffic be, and they are hereby permitted to increase the present so-called commodity rates from eastern Canada so as to place them on at least an equality with the rates now in effect from the neighboring States of the Union, and that the rates so increased be permitted to become effective not earlier than the first day of August, 1918, upon not less than five days' notice to the Board and to the shipping public by filing and posting in the manner prescribed in the Railway Act.

(S'g'd) H. L. DRAYTON,
Chief Commissioner.

Tarvia for Cold Patching

A vest-pocket reference booklet showing how "Tarvia-K.P." may be used to advantage in patching roads has been prepared by the Erickson Company, New York, for the Barrett Company. "Tarvia-K.P." is described as the roadmaker's cure-all. It is useful alike in patching macadam and sheet asphalt, in repairing bituminous concrete and cement-concrete, in giving new life to all bituminous pavements, in treating wooden bridge-floors and as a binder in constructing a pavement of the mixed type. It is a material that may be used for patching at any time of the year.



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WAR has placed Canadian industry on trial, and has proved the value of sound business organization backed by efficient methods of production.

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AND ROOFING FELTS IN CANADA



Among the Industries

Under this heading are published items of news of current interest concerning the activities of Canadian manufactures. Information about changes of interest, enlargement of plants, and plans for future developments are always welcome, and are published free of charge, provided they should not be properly classified as advertisements

*Items prefixed with an asterisk are based on official information received in each case from the companies mentioned. Other items, while secured usually from reliable sources, have not the same authoritative origin.

BRITISH COLUMBIA.

Nelson.

Fire destroyed a pipe factory and planing mill at Brilliant. Damage is estimated at \$20,000.

New Westminster.

The erection of a cooperage factory is contemplated by the Great Northern Canneries Company.

North Burnaby.

Fire damaged Pearson and Company's shingle mill on Burrard Inlet recently to the extent of \$59,000. Insurance, \$25,000.

North Vancouver.

Plans are in preparation for the erection of a cold storage plant costing \$70,000 by the Great Northern Canneries. The company also contemplates the erection of a fish-smoking plant.

The Wm. Lyall Shipbuilding Co., contemplate the erection of an addition to shipbuilding berths. Manager, E. D. Cook.

Port Haney.

The Miami Corporation, Haney, B.C., and Delaware, U.S.A., contemplate the erection of a lumber mill. Abernethy & Lougheed, Port Haney, are local representatives.

Queensborough.

The British Columbia Manufacturing Co. intend to erect a new box factory and sawmill on the waterfront here.

South Vancouver.

Dry kilns owned by the Ontario Lumber Company, Ontario St., destroyed by fire. Loss, about \$10,000. Will rebuild at once. Manager, M. Broadfoot.

Work is proceeding rapidly on the construction of the International Cordage Company's plant at South Vancouver, and it is expected the plant will be in operation within about ninety days.

Steveston.

The Steveston Canning Company contemplates rebuilding their cannery at once at a cost of \$7,000.

Gosse-Millerd Packing Co., Ltd., 597 Hastings W., Vancouver, plan to rebuild their cannery at a cost of \$70,000.

HELPING to SPEED the MAKING of MARINE BOILERS for "MORE SHIPS"



Commercial Acetylene is to be found in many such plants in all parts of Canada and the United States.

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Where the load is jerky ~

such as on the circuit that provides power for this big battery of drills—the cost of fusing is an item that is carefully checked up on.

ECONOMY renewable FUSES
cut annual fuse maintenance costs 80%

Economy Fuses lead in accuracy. That is the chief reason why they are used by prominent munition plants, by the U. S. Navy and others who must consider absolute electrical safety above everything else when buying fuses. Any inexperienced hand can replace the link and renew the fuse in a jiffy. And that 80% saving is not to be ignored.

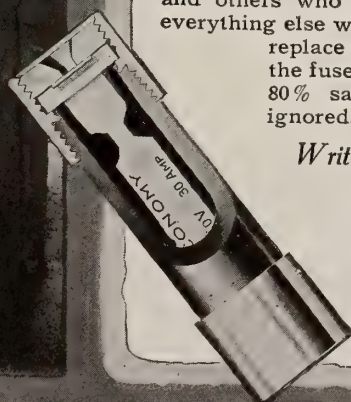
An inexpensive little "Drop Out" Renewal Link restores a blown Economy Fuse to its original efficiency.

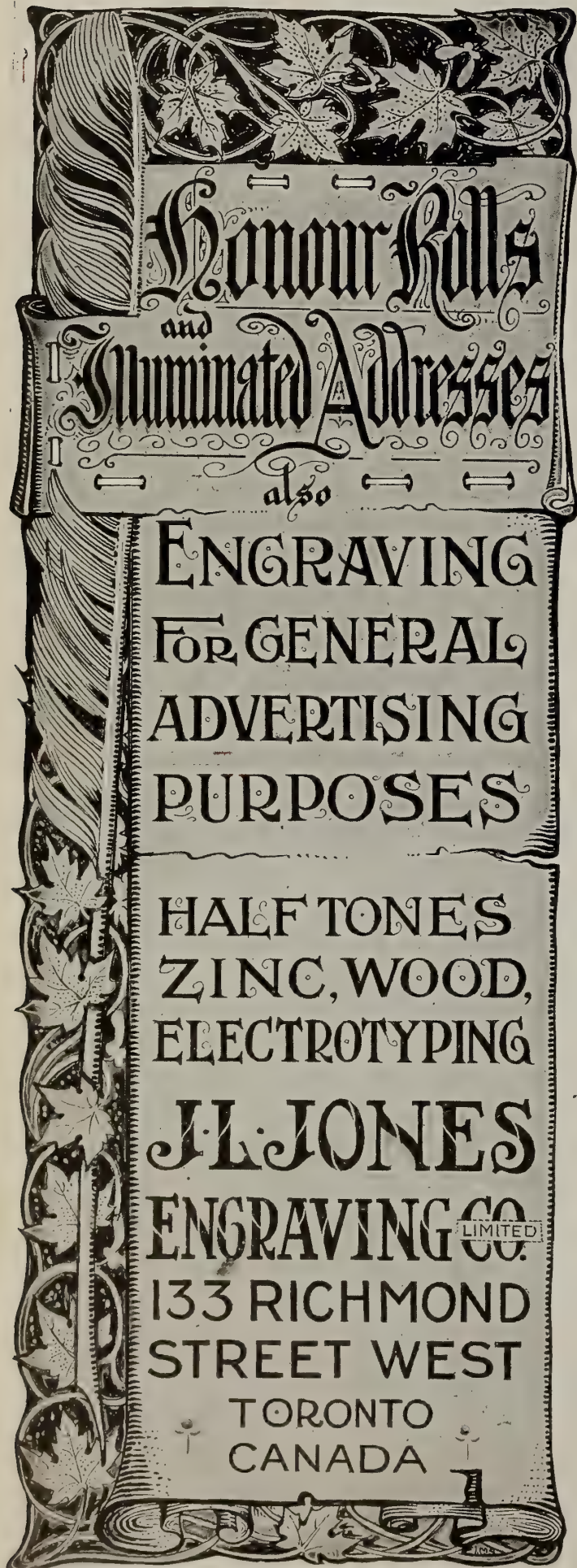
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Sole manufacturers of "ARKLESS"—the Non-Renewable Fuse with the "100% Guaranteed Indicator."

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CANADA**

Vancouver.

John Coughlan & Sons are rebuilding their shipyards at Front and Columbia Streets, recently destroyed by fire.

The Defiance Packing Co. will erect buildings here to cost \$50,000. Heavy mill construction, 3 stories high.

Victoria.

The Increased Production Committee of Victoria contemplates establishing a municipal drying plant for perishable vegetables, etc.

MANITOBA.

Winnipeg.

The Hygiene Products, Limited, will erect a plant at their present location, 607 Young Street, Winnipeg.

Contract has been let for a \$27,000 four-story mill for the B. B. Rye Flour Mills, Limited.

NEW BRUNSWICK.

Campbellton.

The McLennan Foundry & Machine Works, Ltd., is contemplating the erection of a shipbuilding plant at Duncan's Point, on the Restigouche River.

Hampton.

Hampton suffers a severe loss in the practical withdrawal from the lumber and box manufacturing business of the firm of G. E. G. Flewwelling Mfg. Co., Limited, the large interests of the company having been purchased by Randolph & Baker, Limited, St. John. The Hampton and Perry Point mills, stores, etc., are included in the purchase, and although the Flewwelling Co. will not retire from some lines of business for some years yet, the bulk of the manufacturing will be transferred at once. Lack of raw materials in the locality prevents any effort to open up a substitute business. The manufacture of matches was discontinued last year. The industry was started in the sixties by the late Gilford Flewwelling, the company being incorporated in 1895 under its present name.

Hartland.

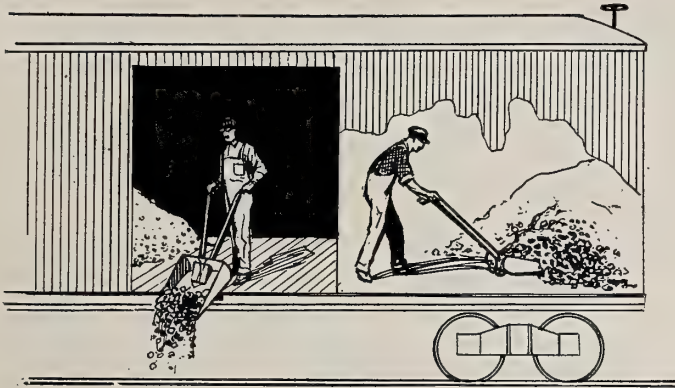
The new starch factory here is now in operation. The plant has been constructed on a much larger scale than the average Maine factory, and will later, when stock is available, be capable of a tremendous output. This new industry at Hartland will prove a boon to the farmers in this section of the province. A farmer may now sell his entire crop, since starch factories generally utilize the small ungraded potatoes—the culls from the fields. And should the table stock go flat he has still a loop-hole of safety at the starch factory. H. H. Hatfield, R. W. Cameron and A. W. Kyle, all of this town, are large stockholders and also the managers of this enterprising concern.

Moncton.

The Maritime Linen Mills, Ltd., has been incorporated with a capital of \$24,000 to manufacture worsted and linen goods. The new company will establish its plant at Moncton, taking over the machinery and raw material of the Eastern Linen Mills, formerly of Dorchester, N.B.

St. John.

The transfer of the Norton-Griffiths contract, which carries with it, it is understood, the establishment of a steel shipbuilding plant and the completion of the dry dock at Courtenay Bay, will mark an important epoch in the industrial history of St. John. The St. John Dry Dock and Shipbuilding Company, in association with the Midland Shipbuilding Company and the Great Lakes Transportation Company, are



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IF YOUR COAL
COMES IN BOX
CARS

UNLOADING box cars is an expensive operation at best. Two men with ordinary shovels will take a day sometimes and it is hard work.

A test, under actual conditions, was recently made by the P. Burns Company of Toronto, coal dealers. Two men working with Truck Shovels took off a 40-ton car of coal in 50 minutes. They were just ordinary men and were working at just an ordinary rate.

A great deal of coal is now being shipped in box cars. The present car shortage demands it. Add a Truck Shovel to your equipment and your men will unload a box car quicker than any other.

Price, \$18.50

Immediate Shipment



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MINERS OF

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Pottery and Office, St. John, N.B.

Clay Pits, Musquodoboit, N.S.

the people who propose undertaking this enterprise. Among those interested in the project are James B. Craven, of New York; James Playfair, Midland, Ont.; W. H. Shepard, Waubesa, Ont.; Hon. Senator Richardson, Kingston, Ont.; D. White, Jr., Midland, Ont.; W. E. Phin, Hamilton, Ont.; James B. Tudhope, M.P., Orillia, Ont.; D. S. Pratt, Midland, Ont.; J. A. Paisley, Cleveland, Ohio, and T. A. Duff, of Toronto. Mr. Craven and his associates, it is understood, will take over the Norton-Griffiths Company's interest in the Courtenay Bay project. The Company, when preliminary arrangements are completed with the Government and the city, expect to start construction on two 10,000-ton steamers. The dry dock, which was originally contracted for at 900 feet, will be enlarged to a length of 1,150 feet. It is estimated that the new plant will employ 2,000 or more hands. About \$7,000,000 are involved in the present scheme.

The Maritime Bridge Co., Ltd., New Glasgow, have the steel contract in connection with the erection of a \$500,000 addition to steel plant for T. McAvity & Sons, Ltd., 12 King St.

The sardine factory of the Booth Fisheries, Limited, West St. John, is starting operations this month. The plant will employ 60 men and 120 girls, exclusive of the office staff. When operated to full capacity the plant can turn out 10,000 cases of fish per week. It is not expected that it will be operated at more than half capacity this season. Work on the factory was commenced on April 7, the buildings were completed in seven weeks and the equipment was ready in eleven weeks.

NOVA SCOTIA.

Liverpool.

The North American Fisheries and Cold Storage, Limited, will erect a cold storage plant.

Mahone Bay.

The new tern schooner, "William Duff," was launched from the shipyard of the Ernst Shipbuilding Company on June 6. The measurements of the "William Duff" are as follows—Length of keel, 127 feet, breadth of beam 32 and a half feet, depth of hold, 12 and one half feet. She will measure 400 tons net register, and 450 tons gross. She will be commanded by Captain Harold G. Corkum, one of Lunenburg County's most successful ship masters, and will likely load in July for a West India port. She is owned by a number of ship owners in Lunenburg and La Have, the Company being known as the William Duff Shipping Company, Ltd., with Arthur H. Zwicker, as president, H. G. Corkum, as Vice-President and William Duff, M.P., as Managing Director.

Sydney.

The first sod was turned on June 4 at the site of the ship plate mill which is to be erected by the Dominion Steel Corporation in connection with their works at Sydney. Poupere Bros. have the contract for the excavating work which will take about two months, after which the laying of the immense concrete foundations will be started. It is estimated that 200,000 cubic yards of earth will be removed in the process. The building, which it is expected will be well under way early in the winter, will be 1,200 feet long and about 125 feet wide, and will be one of the largest single structures in the Dominion. On the completion of the building the mill plant will be installed and the company will be ready to turn out plates by the latter part of next year. The total cost of the plant is estimated at \$4,000,000, with an output of 150,000 plates a month. Not only will the local and Dominion market be supplied, but the Dominion Steel Corporation expects to sell the product of this mill in the United States and other outside markets.

Industrial Housing



QUICK SHIPMENT

A Train Load of ALADDIN Houses Per Day

Depending upon size of house, we load from one to three complete houses in each car. Normally, shipments arrive at Atlantic Coast points in about six days after leaving our mill.

QUICK RESULTS

A Gang of 120 Men Can Erect 10 ALADDIN 5-Room Houses Per Day

Aladdin Houses are Read-Cut. Every piece of material, joists, studs, rafters, sheathing, siding, flooring, interior finish, is cut to proper size, marked and numbered and ready to nail in place.

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Our plans are drawn, prepared and finished for cities of from 300 to 3,000 population. Experienced town planners, landscape architects, engineers and builders have spent months of study and work in their production. This service becomes a part of every Aladdin Housing transaction—a single house or a complete city.

Over One Thousand ALADDIN Houses Carried in Stock

All lumber, shingles, lath, millwork, siding, flooring, interior finish, plaster, hardware, paints, nails, are carried constantly in stock, ready for instant shipment.

Hundreds of American Corporations Have Built Aladdin Houses

As many as five hundred Aladdin houses have been sold to a single corporation. Re-orders are constantly received from corporations who have tested our houses by actual purchase and erection.

A Single House—or A Complete City

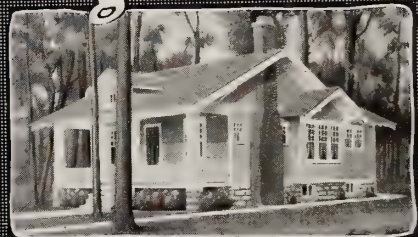
The Aladdin Company will quote you a definite price on a single house or complete cities of 300, 500, 600, 1,000, 1,500 and 3,000 population. These cities are now listed in our book on Industrial Houses. Cities include homes, stores, churches, schools, municipal buildings, water distributing systems, electric light plants and distribution, sewerage systems, trees, etc.
"Book of Aladdin Homes" No. 331 with full information, floor plans and prices will be mailed on request. Aladdin book "Industrial Housing" mailed only to inquiries written on business or official stationery.

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It cushions every bearing and moving part with a wear-preventing film.

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Canadian Rumely Co., Limited
48 Abell Street, Toronto

Stellarton.

W. P. McNeil contemplates the erection of a munition plant.

ONTARIO.

Alvinston.

The flax mill belonging to Robert Waddell, Trenton, which was destroyed by fire, is being rebuilt at a cost of \$10,000.

Bobcaygeon.

The Magnet Toy & Novelty Co., Port Hope, contemplate the erection of a toy factory on Sherwood Street.

Brampton.

The Hercules Rubber Co. intends to put up an extension to their factory here to cost \$12,000.

Brantford.

Contracts have all been awarded for the erection of a \$175,000 shell factory for Motor Trucks, Limited, Elgin Street.

The Canada Plaster Board Company has been granted letters patent of incorporation and is locating at Brantford, Ont., its capitalization being \$100,000.

The Verity Plow Co. have let the contracts for a \$30,000 extension to their plant here.

An addition costing \$15,000 is being made to the factory of the Waddell Preserving Co., Limited.

Elmira.

The Elmira Rubber Company contemplate the erection of a one-story addition to building.

The Elmira Machinery & Transmission Co., Church Street, contemplate the erection of a factory building.

Fenelon Falls.

The Wood Turning Products Co., of Toronto, are to erect a factory in town. The building is to be completed by August 1st, and in running order that month. It will be a one-story concrete block building, 120 feet long and 40 feet wide. This company will employ from thirty to forty hands at the start and a few months later would probably employ from 50 to 100.

Galt.

Plans have been prepared for a three-story brick addition to the factory of Newlands & Co.

The Roelofson Machine Tool Co., Beverley St., contemplate the erection of a brick addition to factory.

A permit has been granted for a substantial addition to the plant of Newlands & Co. The permit calls for a three-story brick building, 71 by 65 feet in dimensions, with stone foundation, to be erected south of the present plant on the east side of Ainslie street. The contracts for the building have not been let, but tenders are being called for and the work is to be gone on with immediately. It is understood the new building will be used for a card room and storage purposes.

An addition is being made to the plant of the Galt Brass Co., Limited.

Goderich.

The National Shipbuilding Co. plans erection of brick and reinforced concrete boiler shops and factory. Estimated cost, \$75,000.

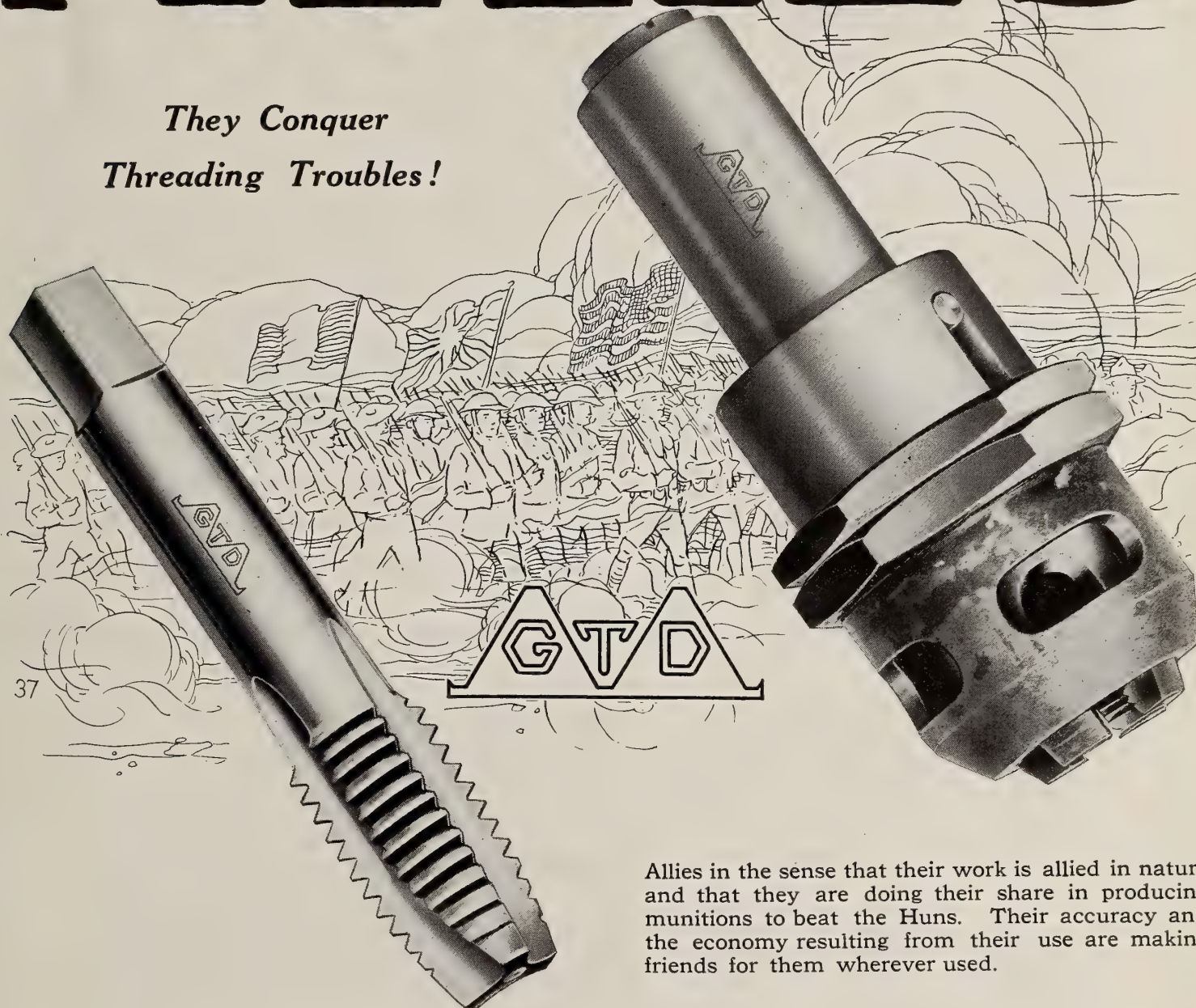
The Goderich Manufacturing Company will erect a \$30,000 planing mill.

Guelph.

Alterations costing \$20,000 are being made to the factory of Sythes & Co., Limited.

ALLIES

*They Conquer
Threading Troubles!*



Allies in the sense that their work is allied in nature and that they are doing their share in producing munitions to beat the Huns. Their accuracy and the economy resulting from their use are making friends for them wherever used.

The "Gun" Tap

Cuts with a shearing motion which shoots the chips ahead and out of the hole. This means no breakage due to chips jamming, less power to drive, high running speeds and no backing out of hole to clean out chips.

The "Acorn" Die

is simple, compact and very accurate. Adjustment is obtained by turning the cap out of the body, forcing the prongs of the die toward the center. This die can't be beat for accuracy.

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1/8 to 5/8" thick up to 48" wide, weighing up to 1,200 lbs. each

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We manufacture Merchant Bars, Rounds, Flats, Squares, Ovals, Half Ovals, Tires, Sleigh Shoes, Plain or Twisted Concrete Bars, Agricultural Sections, Cold Drawn Shafting, Machinery Steel, Angle Bar Fish Plates, Track Spikes and Bolts.

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Architects :
Van Leyen & Schilling
Detroit, Mich.

We built this building in the fall of 1915. Since that time we have completed four other large contracts. We have lately been awarded contracts on two more large buildings, bringing the total value of buildings erected for the Peters Cartridge Co. to \$760,000.

We aim to do every job in such a manner as will assure us all the building work the owner may require done in the future.

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Hammers



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of All
Descriptions

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Produced at

The James Smart Plant, Brockville

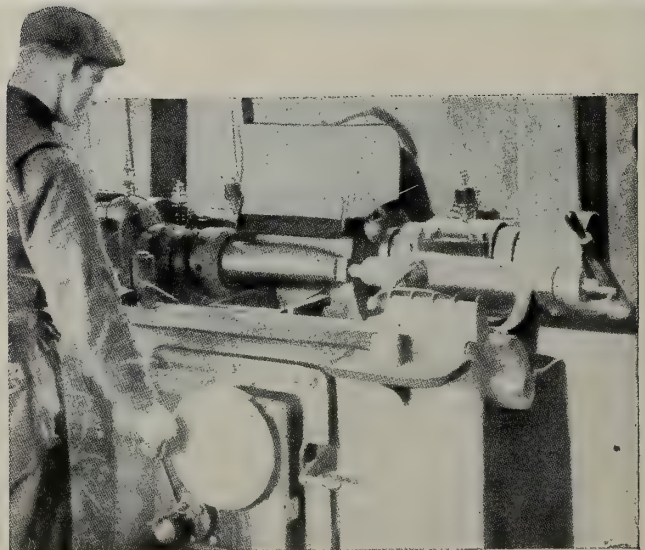
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Canadian Hart Wheels cut faster and longer than any other grinding wheels. Put your grinding problems up to us.

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Has the pleasure of announcing that to meet the demands of an increasing business it has become necessary to provide greatly enlarged facilities, both in the way of factory equipment and capital, and that to effect this, the Company has been re-organized, and, having allied itself with interests already well known in Canada, will hereafter be known as

Hiram Walker & Sons Metal Products, Limited

THE BROWN BROTHERS LIMITED

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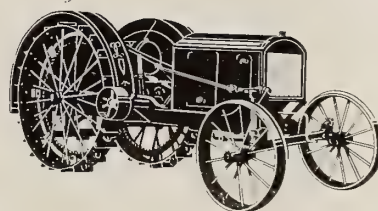


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The installation may be overhead, underground or submarine. It may be for a Telephone Company, a Telegraph Company, a Railroad Company or for a street lighting system.

The quality, both of the product and the service, is largely the reason for the universal demand for Wires and Cables of Northern Electric manufacture

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If you require quantities of

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etc.

Send us your enquiries

THE
NATIONAL ELECTRIC HEATING
CO., LIMITED
TORONTO

St. Thomas.

As a result of negotiations conducted by J. Dowler, of the firm of R. H. & J. Dowler, Limited, St. Thomas has secured a new industry, which will employ between 200 and 300 hands. It is announced that Lawson & Jones, lithographers and paper box manufacturers, London, Ont., have purchased from E. A. Smith, of this city, the Thomas Brothers' factory, until recently used by the Militia Department as a barracks. The plant will be operated in connection with the company's present plant in Clarence Street, London. At the special request of the Imperial Munitions Board the company has, although at a disadvantage to themselves, agreed to set apart one-third of the plant for the manufacture of shells. The building was until about six years ago used as a brush and broom and woodenware factory by Thomas Brothers, and was vacant for about three years after that company went into liquidation. For the past three years it has been used as temporary winter quarters for troops in training.

Windsor.

Work in connection with the construction of the plant of the Canadian Steel Company is proceeding vigorously. It is estimated that upwards of \$20,000,000 will be spent on the plant and connected buildings.

Woodstock.

By-law to secure site and erect a factory estimated to cost \$20,000 for the Woodstock Worsted Spinning Company has been passed. Superintendent, E. Holden.

A by-law was carried by the ratepayers granting a loan of \$18,000 to the Hosiers, Ltd., to be used in buying a site and erecting buildings. Another by-law was carried authorizing a loan of \$20,000 to the Worsted Spinning Co. for erection of buildings.

QUEBEC.

Deschenes.

The contract for the construction of the nickel and copper refining plant for the British-American Nickel Corporation, calls for completion of the job before the snow falls. The buildings and machinery will cost over one million dollars. Bate, McMahon & Company have the contract.

Montreal.

A 25,000 plant is being erected by Darling Bros., Limited, at Prince and Ottawa Streets.

A three-story addition is being made to the shell factory of Lymburner, Limited, 360 St. Paul Street East.

An addition is being made to the factory of the Major Mfg. Co., Limited, 314 St. Antoine Street.

Anglins, Ltd., 65 Victoria St., have the general contract for \$100,000 two-story brick factory for Caron Bros., 233 Bleury Street.

A \$20,000 addition is being made to the plant of the Imperial Pin Co., Limited, 500 Parthenais Street.

The Dominion Copper Products Co., Limited, Lachine, are erecting a \$22,000 machine shop.

Quebec.

Shoe factory owned by Ls. Beaubien, 191 Fleurie St., destroyed by fire. Loss \$25,000. Will rebuild shortly.

SASKATCHEWAN.

Moose Jaw.

Gordon, Ironside & Fares are to erect a new \$125,000 abattoir here. Carter, Halls-Aldinger, Winnipeg, have the general contract for this job.

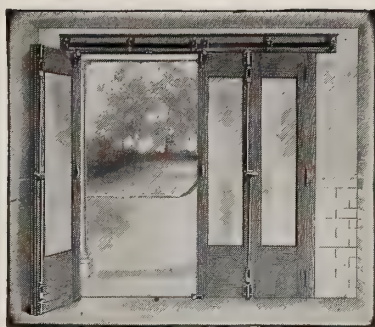
Saskatoon.

The Canadian Leonard Construction Company have the general contract for alterations and addition costing \$200,000 to factory for the Quaker Oats Co., Barrie Bldg., Peterboro.

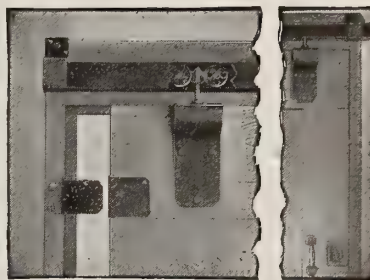
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PARALLEL SLIDING DOORS.
For Garages and Drive Barns.
Any number of Doors in the series.



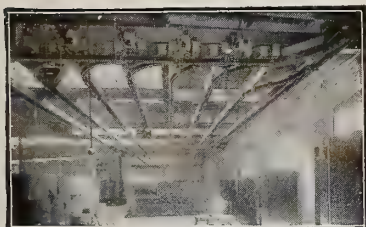
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For Garage. Very convenient. Two,
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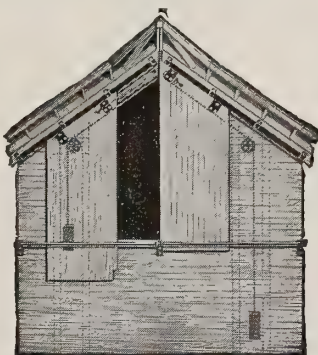
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To make a sliding door fit flush with
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For Garage. Very popular. Costs
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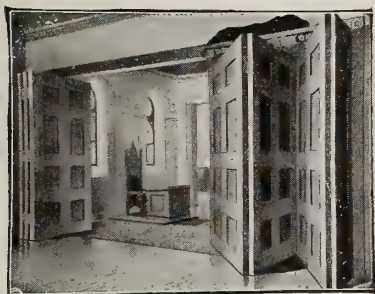
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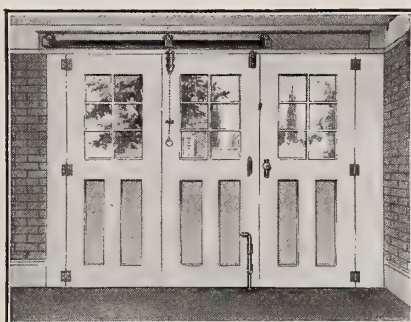


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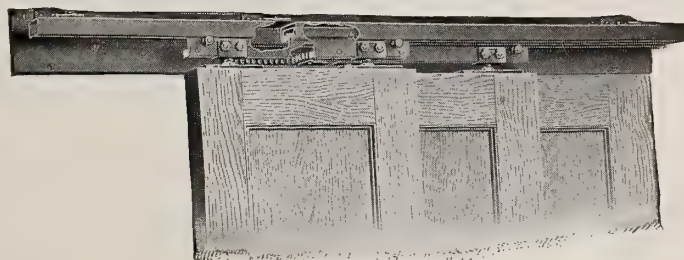
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Fits tight. No warp or sag.



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For Freight Sheds, Elevator Openings.
Inside or Outside.



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HANGERS.
For doors from
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They have no
equals.



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Centre hung; not side-hung. Dirt-proof. Maximum efficiency
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ST. LOUIS

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A Factory "Vestibule" School

Story of How a Factory in Worcester, Mass., Has Been Solving the Problem of Securing Sufficient Skilled Labor to Keep Its Machinery in Operation

By JOHN C. SPENCE
(From "The Open Shop Review")

We started this department in December, 1915, because of the drain on Worcester's skilled help caused by the vast increase in munition work, tool work, etc., in Worcester and neighboring towns. We found that the regular foremen in charge of production did not have the necessary time to give to the breaking in of green help, or of help that had obtained only a partial training at other shops. We believed it would pay to have a separate training department to which all beginners would be sent, and there remain long enough to learn the rudiments of machine shop practice. We do not pretend to turn out, by means of this department, skilled machinists, although in the case of those who have shown a natural gift for mechanics it has been a wonderful revelation to see with what rapidity they have learned.

Our training department is in a gallery of one of our mills, and is 23 feet wide by 264 feet long, an area of 6,072 square feet. The department has its own tool vault, washroom and toilets, separate from the rest of the plant.

We now have in training thirty-three men and boys, using the following equipment: Seventeen lathes, two vertical milling machines, three horizontal milling machines, one hand mill, three universal grinding machines, one shaper, three upright drills, two sensitive drills, one floor grinder, two arbor presses, one straightening press, one gas furnace and 130 feet of benches.

We have put through this school, since its inception twenty-eight months ago, 270 people. We are now putting them through at the rate of about five per week. We have retained ninety of these in our employ to date, in addition to those now in the school. Other Worcester firms have hired 180 away from us. The fact that other people are hiring these men away from us is an indication that the product of our school is at least worth bidding for.

Several of our boys who have had a total of not over four months' training have been accepted by the navy as second-class machinists.

The man who is our foreman of toolmakers on the night shift is a product of this school, and one of the best toolmakers we have. Prior to December, 1915, he had had no machine shop experience whatever, and we hired him from a firm making paper tags.

We have had quite a number of men who, although raised in some branch of industry utterly foreign to a machine shop, in a very few weeks of our shop training have made such

PETERBOROUGH ONTARIO, CANADA

The Manufacturer in Peterborough has many advantages. He connects directly with the G.T.R. and C.P.R., and by canal with all principal Waterways. He has abundant cheap electricity. He draws for his labor from a population of 24,000 industrious, home-loving people. Peterborough is the town worth living in, having all City advantages with fine country surrounding, excellent educational facilities and very moderate living expense.

FINEST LOCATION IN CANADA FOR MANUFACTURERS

Hydro-Electric power is developed on the Otonabee River, and connecting Waters, by a system owned by the City, and rates are low. Peterborough has been notably free from labor troubles, and our Manufacturers have had no trouble in procuring labor of all classes. Labor costs less than in the larger Cities.

CENTRE OF POPULATION EXCELLENT TRANSPORTATION FACILITIES

If Transportation charges are an important part of your manufacturing problem, Peterborough will interest you. It has direct railway connection with all big Centres, being situated between Montreal and Toronto.

There are over 60 factories, the largest employing about 2,000 hands. It is the civic policy to encourage manufacturers, and the city is reserving for new comers a number of very desirable manufacturing sites. For further particulars, write, wire or telephone—

THE CITY CLERK, Peterborough, Ontario, Canada

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TO every automobile owner, we offer this handy oil can that reaches the hard-to-get-at places—a great convenience that will be a constant reminder of En-ar-co National Motor Oil and other "Quality First" petroleum products, all "Made in Canada." Get the can and then try these products of supreme satisfaction.

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A List of plants in your locality, as well as
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Manufacturers who are buying forgings or drawn or stamped metal parts outside of Canada, can do something towards helping this trade balance, by calling upon us for these goods.

We are equipped to make practically anything in a steel forging or steel stamping. Our capacity is so large that we can give prompt delivery; and our efficiency is such that we can quote you attractive prices for high-class work.

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Mackinnon Steel Co., Limited

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of every description

Buildings, Bridges, Penstocks,
Towers, Tanks, Roof Trusses,
Columns

□ □ □ □

Our engineering staff is always at your service.
If you have a problem--let us help you solve it.

pieces as milling cutters, machine reamers, arbors, etc. These, of course, were made under pretty constant supervision of the instructors, of whom we have one chief and four assistants.

You will perhaps remember, when you visited our factory, talking with some of the men in our school. Possibly you will recall one who stated that a week or two before your visit he had been an attendant in a Turkish bath. He is now in the production department of our plant, running a No. 3 Cincinnati horizontal milling machine, and his foreman says he is a good man—better than he can get through our employment department in these times.

The general opinion of the shop is that the school is a good scheme. The shop foremen have orders not to hire any unskilled help to be used as producers, i.e., either to learn to operate a machine or to assemble machines, without first consulting the chief instructor of the school. This assures the men in the school obtaining opportunities to get into the shop, and at the same time does not prevent the foreman from getting anyone in whom he is interested into the school.

When an opening in the shop presents itself, the chief instructor selects from the school the man he thinks will best fill the place. The length of time the man has spent in the school has practically no bearing in the case. Some men, in a few days, due to natural intelligence and ability, or due to the fact that their judgments have been matured by years of experience in some form of mechanical work, are better fitted to take shop jobs as operatives than are other men not so fortunate. In some cases men have spent only two or three days in the school. In other cases they have had to remain several months. The average time has been about three weeks.

We pay a beginner according to age, previous experience, etc. Boys from sixteen to twenty, without previous experience, get from seventeen to twenty cents per hour. Men who have done such work as driving a grocery team get thirty-five cents per hour.

Special Record is Kept

After a man leaves the school and takes a job in the shop, the chief instructor still continues to keep in touch with him for several weeks. This has enabled us to save a number from discouragement. As each man is sent from the school to the shop, the cost department is notified, and a special record is then started and maintained for the following six months, in order to show the earnings of these men in regular shop work. This gives us a good idea of the value of the men we are raising, as their earnings are an indication of just how they compare with skilled men on regular shop work at regular long-established piecework prices.

We have found very few who have not earned at least up to their day work rating, and, on the average, these men have earned ten cents per hour over their day work ratings.

Our work consists of making high-grade grinding machinery. We use all of the machinery in use in any machine tool or automobile shop. Hence our problem is the same as that of a great many firms; in fact, the great bulk of the firms engaged in work necessary for the war.

In closing it might not be out of place for me to enumerate some of the reasons why we believe it is better to train operatives in a separate school rather than in the main shops:

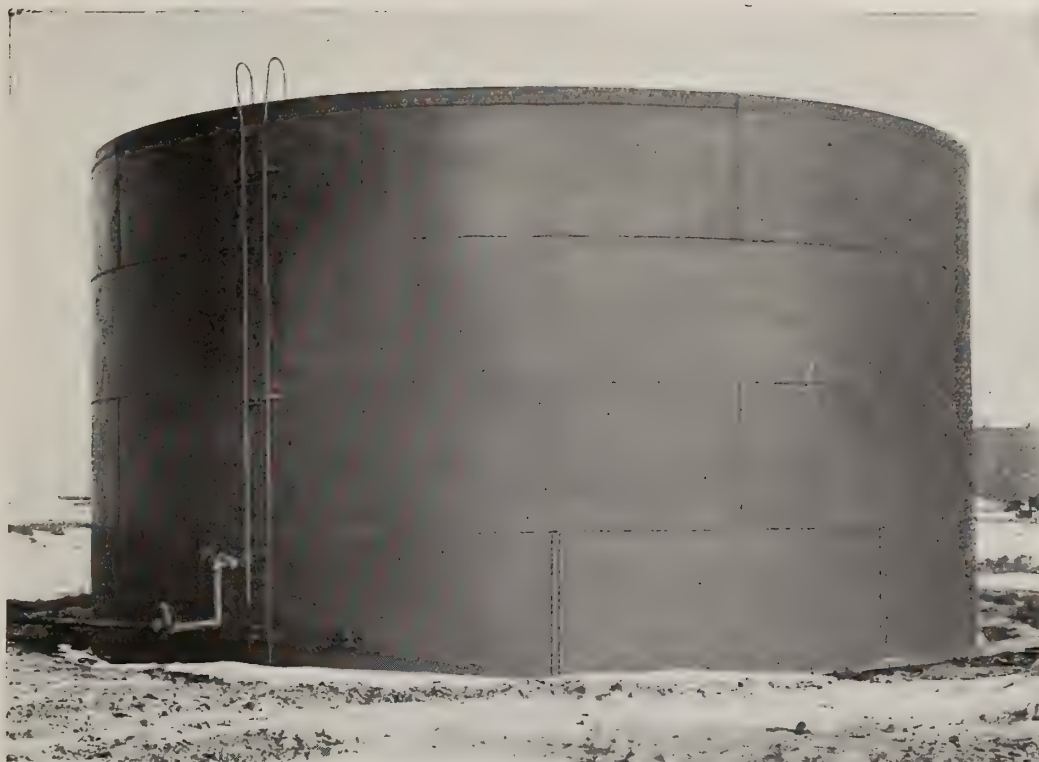
1. Few men have the faculty to teach. Oftentimes the best workman is the poorest teacher. Hence it is easier to find one teacher and let him do the bulk of this work.

2. The press of output prevents a foreman from giving proper attention to beginners, even if the foreman happens to be a good teacher.

3. It does not pay to have a high-class executive foreman spend time on a beginner any more than a professor of mathematics in a college could afford to put his time into first-grade

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The Toronto Iron Works, Limited

Toronto - Canada

work. In fact, in most cases he would probably lack the real qualifications for first-grade work, i.e., patience and human insight.

4. Unless the school is centralized, the corporation cannot readily carry out a fixed policy with regard to teachings other than mechanical; that is, questions pertaining to honesty of product, citizenship, etc.

5. The influence upon the future attitude of these men toward each other and toward industry depends largely on the impression made upon him at the start. This should be controlled as far as possible.

6. In a school the beginner is sure of a variety of work, whereas the tendency in the shop is to give the beginner such a dose of whatever simple work that he can do that he will not disturb the foreman again for some time, or, as the boys say, enough to "hold him down for a while."

7. The training probably costs less in the school than in the shop, although apparently not, as the true cost in the shop is almost always buried in departmental expense. It is there just the same.

I believe thoroughly in this work, and I believe that the competition of the near future will compel all industries to adopt some such scheme, not only for what might be called "first grade" work, but also to extend the scheme to embrace the training of each grade into still better workmen.

Three Aspects of Safety First

Why Safety Should Appeal to the Employer—Why Safety Should Appeal to the Employee, and How Results Can Be Obtained

By A. P. COSTIGANE

Safety Engineer, Ontario Pulp & Paper Makers' Safety Association

Safety is a small word, but has a world of meaning compressed into its six letters, and it opens up such a large field for study that I have thought it advisable to confine myself to only one or two aspects, and to speak briefly on each. I propose, therefore, to review the following sections of safety, dividing these sections into sub-sections when necessary:

1. Why safety should appeal to the employer.
2. Why safety should appeal to the employee.
3. How can results be obtained?

Dealing with the first section, "Why safety should appeal to the employer," it immediately strikes one that accident prevention and safety organizing should appeal to the employer from two points of view, namely, the humanitarian side and the dollars and cents side. There are nowadays few employers—and with employers are included general managers, etc.—to whom the humanitarian aspect does not make a strong appeal. They have come to realize within these last few years that the men in the mill are human like themselves, having the feelings and intelligence of human beings, and are sensitive to considerate and just treatment. Any manager who has been unfortunate enough to be present in the doctor's office when one of his employees, who has been mauled up in an unguarded belt or other hazard, is suffering the process of having the stump of an arm or leg dressed, is not difficult to convince. The thought naturally occurs to him, what would his wife feel and think if he were to be brought home in a crippled condition, and what of his children's future should they have to depend on a physically wrecked father? An experience such as outlined brings the matter home in a way that the reading of reports or listening

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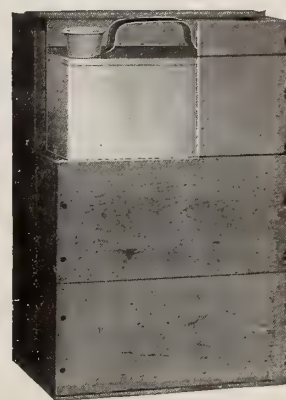
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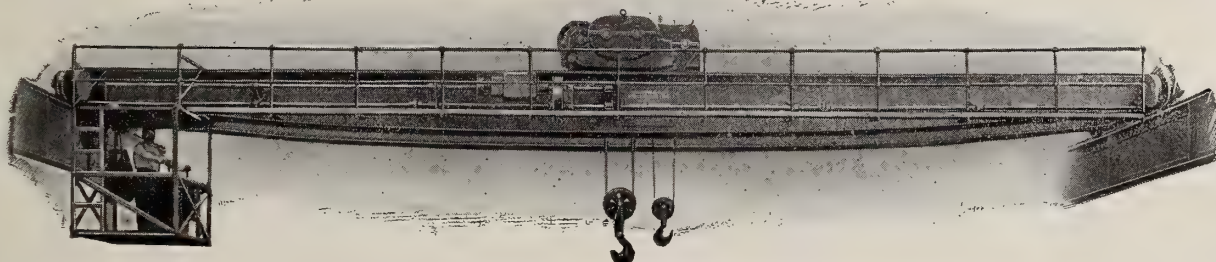
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VARNISHES

BLACK
JAPANS

STEEL BRIDGE
PAINTS

ROOFING
PAINTS

CUP GREASE

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to addresses can never do. The great majority of employers value highly the good opinion of their men, and are anxious to see them working under conditions conducive to health and safety compatible with the exigencies governing the industry. Out of thoughts and feelings such as these animating leading employers of the United States has sprung that association—the National Safety Council—which has in such a short time attained to an international position in which it wields such enormous power for the benefit of all wage-earning humanity. In five years' time the membership of the Council has increased from 40 to over 3,500 industrial concerns, employing 6,000,000 people. Could such an increase have taken place unless the high ideals of justice on which the constitution of the Council is based found ready acceptance on the part of employers and was backed up by them by the expenditure of both time and money?

The Financial Aspect

Let us now examine the dollars and cents of it. This aspect may appeal to some more strongly than the humanitarian, but from my experience of the pulp and paper industry of Ontario, I would say to very few. When by organized effort accidents in any plant have been reduced there will be a corresponding reduction in compensation paid to injured. There will also be a great saving in time lost by injured men, less interruption of work of fellow employees, less waste of material by new men, more uniform production and saving in time of foremen in training new men to take the place of those temporarily incapacitated owing to injury. All such losses can be converted into dollars and cents, and in plants where such figures have been made up they have proved most convincing missionaries of the safety movement.

Speaking of losses due to accident, let me tell you of an incident that came under my own observation. Not long ago I met the superintendent of a plant in which they had a fatal accident. In the course of conversation I put the question: What do you consider this accident cost you?—expecting him to name the sum of a few hundred dollars at the outside. Imagine my surprise when he said about \$1,000. Asked to explain, he said the accident happened at nine o'clock in the morning, and, owing to the unsettling of the other employees and the discussions amongst them over the various details, the output of the plant fell to practically nothing for that day. Two days later the plant shut down for the funeral, all wages being paid by the company as usual. Thus the services of 200 men for practically two whole days was the price this company paid for that one accident. The superintendent did not over-estimate when he placed the figure around \$1,000.

Can Accidents be Reduced?

The question may be asked: Can accidents be reduced? I would unhesitatingly answer in the affirmative, and would point to what has been accomplished in the United States. For these figures I am indebted to Mr. C. W. Price, Field Secretary, National Safety Council.

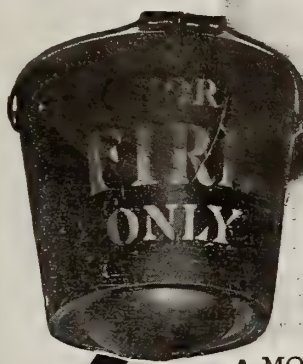
The International Harvester Co., with twenty-three plants, employing 35,000 people and facing all kinds of hazards, have reduced compensation from 54c. per \$100 of payroll to 25c. per \$100 in five years. They have reduced the time lost per man 61.6 per cent., and deaths from ten to four, or 60 per cent. The Eastman Kodak Co. during the last two years has reduced accidents 80 per cent. The records of the American Smelting & Refining Co., Omaha, down to the end of 1916 show a reduction of 90 per cent. in days lost, and 70 per cent. in the number of accidents.

One of the most remarkable stories in the history of accident prevention in the United States is the story of what the great railroads of the country have done. Five years ago

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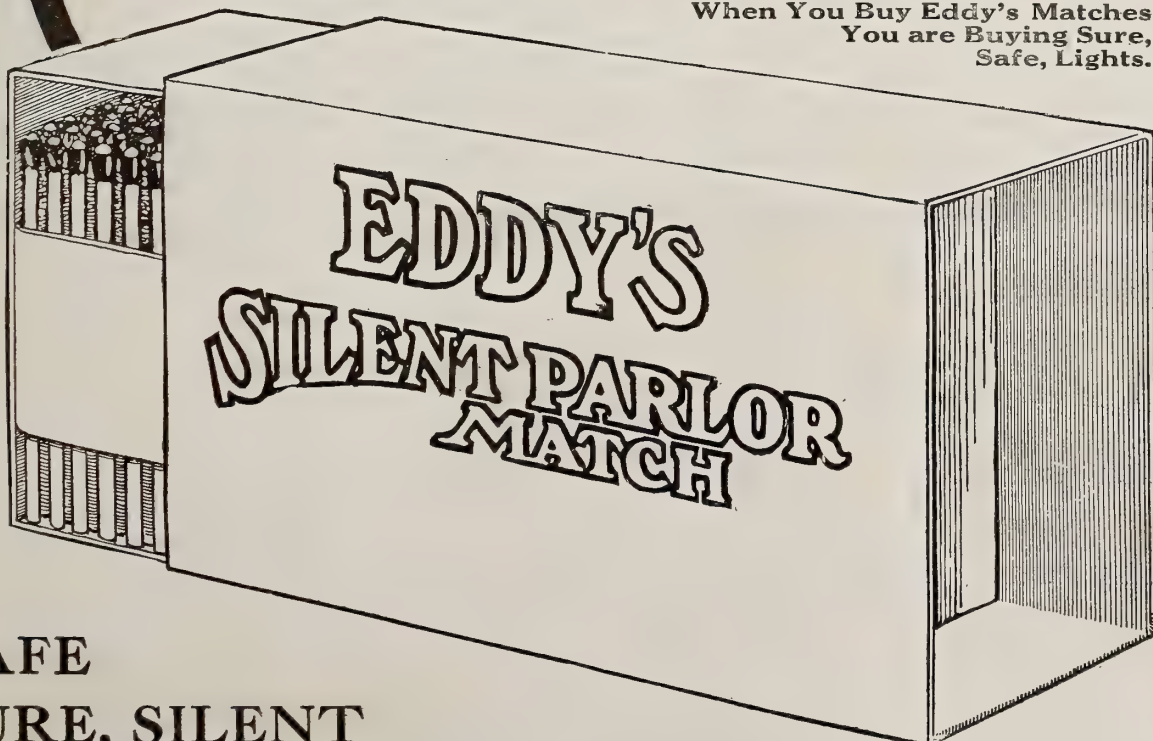
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the Chicago & Northwestern Railroad began to work out an efficient safety organization. They have now 800 men serving on Safety Committees, and during the five years they have reduced deaths to employees 83 per cent.

The Southern Pacific Railroad has reduced deaths to employees 86 per cent.

To sum up, railroads in the United States have, over the period of five years ending 1916, reduced deaths to passengers 50 per cent., reduced the number of employees killed 47 per cent., and reduced the number of employees injured 43 6-10 per cent. Three hundred and twenty-five railroads, having a track of 162,000 miles and carrying 485 million passengers, did not during the year 1916 kill one passenger in a wreck. These figures are authentic, and make clear answer to the query—can accidents be reduced? That is what has been accomplished in the United States, and surely what has been done there can be duplicated in Canada.

Safety and the Employee

2nd Section. Why Safety Should Appeal to Employees. The real safety movement consists fundamentally of constructive work for industrial betterment, with the main purpose of promoting a sound body, a clear eye and brain, and a clean standard of living. Such a movement aims at preventing men from being injured, it precludes poverty, suffering and destitution in the families, it helps to prevent injury by one employee of another by carelessness or thoughtlessness, it includes a spirit of co-operation and good-will throughout the plant, it smooths the difficulties of the new man, it emphasizes the necessity for safeguarding physical hazards, so that employees do not feel that their lives may be snuffed out if they are not constantly on guard, to keep away from moving belts, fly-wheels or open gearing. It provides an opportunity for each employee to signify his interest in his fellow employees by making suggestions for improvements. But what should appeal most strongly to employees is the toll of accidents in the industry every year. In the pulp and paper mills of the Province of Ontario, during the year 1917, exclusive of woods operations, there were 852 non-fatal accidents and seven fatal accidents, involving lost time amounting to 14,249 days. That means 2.09 days were lost for every man or woman full-time worker employed in the industry. Taking the average weekly wage of those injured at \$19.50, which is fairly accurate, we get a total loss in wages of \$39,532. Deduct from this figure the 55 per cent. paid in compensation, amounting to \$21,742, and the remainder, \$17,790, is the actual monetary loss suffered by employees injured during the year 1917. This loss can never be recovered, and is an appalling tax paid annually by the men for the privilege of being careless, thoughtless and indifferent. The price is enormous. Is it not worth while to take every precaution to get rid of this hydra-headed incubus that is threatening the happiness and very existence of those engaged in the industry?

Safeguarding Employees' Interests

The outstanding reason why employees should welcome safety is that such propaganda is for the safeguarding of their interests, both physical and moral. When all employees have grasped this fundamental truth there will be no question of their vigorous and sincere co-operation.

When a serious accidents happens, who suffers? The injured party and in various ways. First of all, he suffers pain, he suffers loss of wages, and, if married, his wife and family suffer with him. You may say compensation will be paid. That is true; but what can compensate a working man, whose whole capital is his health and limbs, for the loss of a finger or a hand, or, in the case of a fatal accident, what money can compensate the widow for the loss of her husband or

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the children for the loss of their father, possibly at a time in their life when a father's guiding hand will mould their future? What money can compensate a widowed mother for the loss of an upright and well-doing son who was her only support? I tell you, gentlemen, there are some accidents which money cannot compensate.

Turning now to the third section. How can results be obtained?

No matter from what angle safety propaganda may be studied, the student invariably arrives at the one and only solution of this mighty problem, co-operation. Personal co-operation on the part of the management must be forthcoming, and that in no half measure, but full, free and open-hearted. The management can co-operate by establishing an efficient safety organization, and see that the efforts are not spasmodic, but sustained. Any safety movement, to be any good, must have the continuous backing of the management. Any signs of indifference on their part are readily noted in the mill, and the example quickly followed. You cannot expect your men to believe in a principle you do not believe in yourself, and you cannot expect safety work to be successful in your plant unless you initiate it and back it up.

Co-operation of the Foreman

Co-operation of the foremen is vital and must be obtained at all hazards. There is no class of men in the mill who can more quickly and more effectually damn safety work than the foremen if their sympathies have not been aroused and their interest secured. The foreman is the most intimately acquainted with the men, and it is really to him that we must look for results. He knows all the physical hazards of the work upon which his men are engaged, therefore it follows that a foreman who is interested in safety and is persistent in his efforts to prevent accidents will have few accidents. What foremen do not always realize is that it is not sufficient to know that workmen are careless, or that the injured man was not sufficiently attentive to his work at the time of the accident, but they should recognize that in the interest of safety this weakness on the part of men must be overcome. The foreman should be made to feel that if one of his men is injured by a preventable accident, to that extent he is unsuccessful, or if he knows that employees under his charge are indulging in practices which involve risk of injury to themselves or others, he should co-operate by eliminating such practices, as otherwise he is morally responsible for any accident that may result therefrom. A foreman who has been successfully inoculated with safety will act as a danger signal for his men. This is especially true of foremen in charge of gangs of outside laborers.

Co-operation of employees means the be-all and end-all of safety work. The multiplicity of ways in which their influence can be made effective are governed to a large extent by the environment of the plant and are too numerous to mention them all. What has already been said about the responsibility of the employer and the foreman does not decrease in any degree the responsibility of the employee. New men do not always realize the hazards of their occupation, and therefore unknowingly take chances. In cases such as these older employees can be of infinite service in pointing out in a friendly way dangers which have not become apparent to the new man. Serving on safety committees, making safety suggestions, spreading the gospel of safety among their fellow employees, and using their influence in every way possible to control the demon of carelessness, which is responsible for such a large percentage of accidents, are some of the ways in which employees can co-operate in improving the conditions and increasing the happiness of their fellow men. This demon of carelessness is always in evidence, and must be sternly exorcised.

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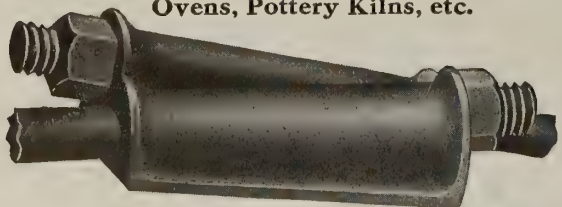
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Ships and Foreign Trade

Several Important Problems That Will Arise After the War as Affecting United States Trade Are Here Discussed and Interesting Comments Made

By ROBERT DOLLAR

An address before the National Foreign Trade Council, Cincinnati

The three all-important matters before our nation to-day are:—

First, the war; second, ships with which to carry it on; and, third, commerce after the war is over. The carrying on of the war to a successful termination is of the greatest importance, of course. To accomplish this it is not only necessary to send plenty of men to France but also to encourage and develop the production of all commodities necessary at home. Fixing of prices is a mistake, as to fix the price below what a commodity can be produced for will only stop its production. In the case of coal, for instance, the price is fixed below what some pits are able to produce coal for; therefore, they had to go out of business,—result, a shortage of coal. What is wanted is to encourage, and not discourage the production of whatever is necessary to carry on the war.

I am expected to talk more particularly of ships, but ships and foreign trade after the war are so linked together that they cannot be separated.

Ships are the delivery wagons of commerce. Without them our nation is at a disadvantage. We have gotten along with only a few ships in foreign trade by getting our neighbor to furnish us whatever tonnage was necessary, provided they had ships to spare. The advice and suggestions made by a number of shipping men to Congress to change our laws to permit us to enter the commerce of the world met with rebuff and, instead, more stringent laws were enacted each session until the culmination was reached when the Seamen's Act was passed. Fortunately, during the war, this is a dead letter and is not being enforced. Surely by this time Congress sees the importance of having ships as they have voted hundreds of millions of dollars to build ships at unheard-of prices, whereas had the laws been changed the same as those of other nations we would have had all the ships necessary to carry our troops to France without costing our nation a cent. Besides, like the merchant fleet of Great Britain, they would all have been ready as soon as required. Now it will be two years before we have enough to meet the Government's requirements.

A Great Fleet of Ships

We are sure to come out of the war with a great fleet of merchant vessels, second only to Great Britain. The question shipowners want Congress to answer is, when the war is over will they pass laws that will permit us to operate our ships on the same terms and conditions as our competitors—the other nations? The difference in wages need not stand in the way if Congress will authorize the Shipping Commissioner to pay the men the difference between foreign and American wages, thereby permitting American shipowners to operate their vessels at exactly the same rate of wages as those of all nations.

The Government is paying for standard ships, 8,800 tons, deadweight, about \$1,500,000.00. The highest price paid in England for a similar ship, for a number of years before the war was \$450,000.00, and, in fact, duplicates of those ships have been built for as low as \$250,000.00. It is reasonable to assume that, shortly after the war is over and conditions throughout the world settle down to normal, the Government will have to lose a million dollars on each ship. Whether they will face the loss or try to work it out remains to be seen.



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Before any work of repair or alteration is commenced on any boiler, notice must be sent to the Department stating the nature and extent of the repairs or alterations proposed to be made. If the Chief Inspector should consider such repairs or alterations of an extensive character, the boiler must be inspected in accordance with the Regulations by an Inspector authorized under the Act.

All communications should be addressed to the Steam Boiler Branch, Department of Public Works, Parliament Bldgs., Toronto.

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At the time shipowners were appealing to Congress for a change in the laws, and not for financial assistance, the Japanese Government was busy encouraging their shipowners by paying a bonus for the building of each hull and for the engine and boilers, according to their horsepower, and when the ship was finished, in many lines they paid a subsidy. The amount of money that they expended has been returned to them in the last three years, several hundred fold. In fact, the earnings of their ships has turned Japan from a debtor to a creditor nation and turned the balance of trade in their favor, and they have now succeeded in getting the complete control of the Pacific Ocean trade, the greater part of which, in all likelihood, they will be able to retain for all time to come.

Question of Wages

We are told that the Seamen's Act would compel them to pay the same wages as Americans are paying. In fact, an article written by Mr. Fursuth to Senator Owen, stated that on ships coming to this country, the men deserted and received American wages. On Japanese ships they are only receiving one quarter of the American wage and none of the men desert for this reason: if a man deserts at an American port, the Seamen's Act provides that he must reship on a Japanese steamer, as he does not know the English language. Furthermore, any seaman that deserts a Japanese ship in a foreign port is subject to a year's imprisonment on returning to Japan. This works out in this way—the Japanese ship pays the old wage and the American ship, in competition, pays four times as much.

When the war is over, (as far as the Pacific Ocean is concerned), how are American ships going to hold their own? It may be that the Shipping Board will retain the management of Government ships and run them at a loss, but to retain and increase the American trade, one thing is of the greatest importance, and that is individual initiative, in drumming up trade for the ships and retaining it. With Government ownership this individual initiative would be done away with. So at the present time there is a great uncertainty of what is going to happen.

As to commerce after the war. It will be acknowledged by everyone that when the war is over this will be the most important matter before our country. Foreign trade is necessary to make a great nation—no nation has ever been truly great without it. The balance of trade brings gold with it, and will, in a great measure, pay up the big national debt we are accumulating.

Some of the Obstacles

To show how much Congress appreciates foreign trade, they have been a couple of years trying to pass the Webb Bill. Other nations compel their citizens to make combinations whereas our Sherman Act threatens to put any American citizen in jail if he attempts it.

In foreign countries we are still short of banks, although a change was made in our banking laws permitting national banks to have branches in foreign countries. The Owen Bill, to establish the Federal Reserve Foreign Bank, if passed, would be a great help. A large number of Japanese banks have been established in the United States within the last few months which shows how commerce compels the reaching out of banking facilities.

Immediately after the declaration of peace all the factories now engaged in producing war material will be changed into producing materials for commerce. It is problematical what effect that will have on foreign trade. In considering this subject we must consider it from the broad viewpoint of one nation against the others, therefore, we cannot look at it from the standpoint of our own selfish interest.

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MONTREAL

We must be up and doing and have the foreign business in hand, ready when the emergency occurs.

To conduct our foreign trade successfully abroad, we must have American managers and they must be men of experience. They have to be trained for the service and it's time that American business men began to get ready. There is a mistaken idea that any fellow can sell to Chinese, Japanese or South Americans, but when our men get there they will find just as smart, keen traders among them as any of our best men at home. So in sending men to foreign countries, send the very best you have and no others. I am pleased to report that in recent years the caliber of Americans in the Far East is much improved; in fact, I consider them a match for those of any other nation. Therefore, I say keep up the standard. It is going to be necessary also for Americans to have offices in foreign lands to properly conduct their business and not depend on the agents of a foreign nationality, as heretofore.

Must Take Off Coats

The trade is not going to be brought to us on a silver platter. We must take off our coats and go after it and now is the opportune time. Americans have a better opportunity than any other nation, at present, to strengthen their trade and also to drum up new business. Every nation is preparing for what they are pleased to call the commercial war after the war. This is the only country that is not taking active and decisive steps to retain all the trade we have, and getting much more. Therefore, I would ask this meeting to start the ball rolling in some big and comprehensive way to get the full co-operation of the business men of the United States and get ready for the keenest competition that the world has ever seen—which will begin shortly after the war ends.

A Blow at the Paper Industry

At the Price Fixed by the Federal Trade Commission in the United States, Canada's Revenue from the Export of Newsprint Will be Reduced Many Millions

By F. J. CAMPBELL

President, Canadian Pulp and Paper Association

The Canadian paper-making industry will lose \$10,660,000 a year, and Canada's foreign trade balance will be that much worse off, as a result of the findings of the Federal Trade Commission on the price of Canadian newsprint paper sold in the United States as compared with what the price should be, if the findings are allowed to stand.

Canada exports to the States about 575,000 tons of newsprint paper annually. On the basis of \$80 a ton, which the manufacturers urged as a fair and reasonable price for their product sold in the States, this should bring into this country \$46,000,000 a year. Instead of this amount, however, under the price fixed by the commission, we shall get at most only \$35,340,000, a difference of \$10,660,000.

The manufacturers contended, and their contentions were based upon ample evidence and supported by uncontroverted facts, for a price of \$80 a ton for newsprint paper in rolls shipped in car-load lots. The commission has fixed a price equivalent to \$62 a ton. It is true that this is an increase of \$2 a ton over the price arbitrarily fixed by the United States Government for the first three months of this year, but the increase has been absorbed, and more than absorbed, by the increased cost of production. Under the conditions at present prevailing, newsprint paper cannot profitably be produced in Canada and sold at \$62 a ton. The findings will work a special hardship upon the so-called high-cost unbalanced mills, such as the Brompton Pulp and Paper Com-

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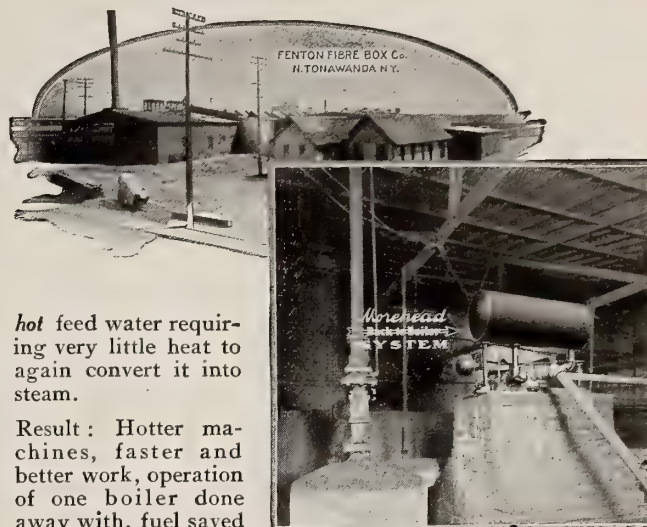
THIS STATEMENT from the Fenton Fibre Box Co., of N. Tonawanda, N.Y., is simply a repetition of similar claims received from several thousand other users of the simple and comparatively inexpensive

Morehead
Back to Boiler
SYSTEM

of steam line drainage and boiler feeding.

In this plant the returns from the steam heated corrigators, hot plates, etc., were formerly collected in a hot well and pumped back to the boiler by the notoriously wasteful steam pump method.

With the Morehead System installed all water of condensation is returned to the boilers direct and under pressure as pure



hot feed water requiring very little heat to again convert it into steam.

Result: Hotter machines, faster and better work, operation of one boiler done away with, fuel saved and everybody pleased.

So thoroughly satisfied was this progressive concern with the Morehead System that they immediately installed a duplicate System in the Buffalo Box Factory which they own and control.

You can likewise convert your radiation losses into their equivalent of dollars. Tell us what you are doing and we will tell you—without obligation—what we can do for you.

Get the advice of our engineering department with our 25 years' experience in solving steam drainage and boiler feeding problems.

Canadian Morehead Manufacturing Company

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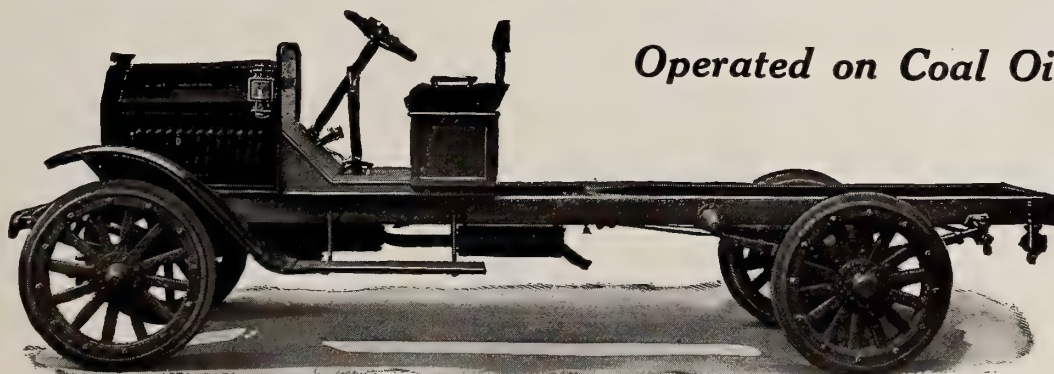
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pany, the E. B. Eddy Company, the Canada Paper Company, the News Pulp and Paper Company and others. The investigation included ten companies, of which three were American and seven were Canadian. Of the latter only one, the Brompton Company, belongs to the category mentioned, and of this the commission says in its report, that it was not allowed to control in the determination of the price fixed. That is, the commission considered only the mills most favorably situated with regard to economical manufacture, the inference being that the less favored mills can either manufacture paper at a loss or go out of business.

Right of Appeal

The manufacturers are not obliged to accept the findings of the commission. They have the right to appeal them to the United States Circuit Court. Whether such an appeal is taken or not depends in part upon the attitude of the American manufacturers who are concerned with our own, in the proceedings. An appeal is not unlikely.

It is probably not within the province of the Canadian manufacturers to question the motives which impelled the Federal Trade Commission to fix such an extremely low price, nor to impugn their good faith. It is singular, however, that the price fixed figures out at just \$5 a ton more than the price arbitrarily fixed by our own Government for the sale of newsprint paper made in Canada and sold to Canadian publishers. In an earlier report, based on conditions in 1896, the Federal Trade Commission declared that it cost the United States mills \$4.50 a ton more to produce paper than it cost the Canadian mills. This is a statement never admitted by the Canadian manufacturers and is regarded by them as a fallacy. But had the Federal Trade Commission taken this as a basis and ignored all of the evidence recently submitted to them, and added the alleged difference in the produc-

tion costs of the two countries to the price now prevailing in Canada and arbitrarily fixed by the Canadian Government, they would have reached approximately the same result as they did reach.

If, in fact, they did resort to this method of disposing of a troublesome issue, the result would show that the Canadian Government's interference with the paper-making industry of Canada has reduced the value of this particular export trade by just \$10,660,000 a year, at a time when we are bending every effort to increase that trade, even going to the length of shutting off various importations in order to help to readjust our trade balance.

Manufacturing Costs

But, if the prices fixed for Canadian paper in the States, are disappointing to the Canadian manufacturers, they at any rate vindicate the stand taken by these manufacturers in regard to the prices charged for paper sold to Canadian newspaper publishers. Although it costs just as much to manufacture a ton of paper in Canada for consumption in Canada as it does to manufacture one for consumption in the United States, the manufacturers are compelled under Government order to sell their product in Canada at \$5 a ton below even the low price fixed by the Federal Trade Commission. In justice to the manufacturers, the Government should at once revise the price in Canada at least to meet that fixed by the Federal Trade Commission.

One thing is certain, and that is that the Canadian paper-making industry cannot achieve its full and necessary development if it continues to be handicapped in the future, as it has been for many months past, by unjustifiable Government interference.

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MONTREAL and
WELLAND

The B.C. Steel Industry

Central Iron Committee Continues to Agitate for the Establishment of the Industry in British Columbia

In furtherance of its campaign to secure the establishment of an iron and steel industry in British Columbia, the Central Iron Committee has addressed the following circular letter to a number of business men throughout the province, and it is expected that from the answers received a good deal of useful material will be gathered. The letter reads:—

Dear Sir:
It may be that you are the man Canada needs right now.
It may be that you are the man British Columbia demands.
It may be that you are the particular person the Central Iron Committee has ordered me to find without delay.
You don't know.
I don't know.
Let us spend a few moments in trying to find out.
Canada needs 365,000 tons of iron and steel in order to carry out her annual construction programme.
Canada produces about one-fifth of this amount.
The United States is the usual source of supply for the greater portion of the iron and steel used in Canada.
The United States has already reached a stage where not a pound of iron or steel can be used for commercial purposes without the permission of the War Department.
The commercial stocks of that country will be at the zero point when the war closes.
Canada will then take her place in the "waiting line."
You know what happens to a country that fails to secure an adequate supply of iron for her commercial needs.
What answer will we have when our neighbors say: "We have no iron or steel to spare—your country is full of raw material—why did you not get busy, and prepare for this in time?"
Where do you come in with regard to these things?
Just wait a minute.
That is what we are coming to now.
British Columbia has vast supplies of all the raw materials needed to produce good iron.
This has been demonstrated to the satisfaction of both the Provincial Government and Federal Government.
The Central Iron Committee will help you to demonstrate it to anyone who has doubts about the matter.
The Provincial Government has agreed to pay a bounty of \$3 per ton on all pig iron produced in the province.
There is a local market, a Pacific Coast market, a world-wide market, for the product.
If there are any "overs" at any time during the first three years of production, the Federal Government will take them from the producers at the going market conditions.
We believe that these aids are sufficient to pave the way for iron production in British Columbia.
These conditions have been brought about by the efforts of the Central Iron Committee, and the willing workers who have so loyally assisted in carrying out the committee plans.
Now it is your turn.
Get in. Put your weight behind this vital programme.
We need blast furnaces for the production of pig iron.
We want them right now.
Can you assist in any way?

RIDOUT & MAYBEE

Solicitors of Patents

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Agencies in the leading countries of the World.

EDWARD MAYBEE, Mech. Eng. J. F. EDGAR, Counsel.
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Collapsible Tubes**

221 RICHMOND ST. WEST - - - TORONTO

Do you know of any avenue along which you think it would be worth while to proceed with this end in view?
Do you know of any person who might be interested in assisting to finance such a business?
Have you a plan of any kind to suggest?
If so, come right along.
Your ideas will receive the most careful consideration.
If they succeed:
You are the man Canada needs right now.
You are the man British Columbia demands.
You are the particular person the Central Iron Committee has ordered me to find without delay.
Write, or see Central Iron Committee, J. F. Bledsoe, Mgr.,
8 Winch Building, Victoria, B.C.

The Concrete Steamer "Faith"

The "Faith" arrived at the port of Vancouver last month and, as the first concrete steamer to tie up at the Vancouver docks, was the object of much curiosity. She uses oil for fuel, has a deadweight cargo capacity of 5,000 tons and is 336 feet long. She encountered extremely severe weather on her passage from San Francisco to Vancouver and the marine



The "Faith" Docked at Vancouver

surveyors and inspectors of the United States Emergency Fleet Corporation, who made this voyage on the vessel, have given her an A1 rating as to sea-worthiness. She has a maximum speed of a little over 12 knots an hour, but it is expected that this speed will be improved in later vessels of her type by finishing them with a smooth surface instead of the rough surface that the "Faith" has.

Air Hoists

The Canadian Ingersoll-Rand Co. have just issued a new catalogue of their direct lift vertical air hoists. The booklet is well illustrated, and gives complete details of the different types of valve used for various classes of work up to five tons capacity—the dust-proof single acting, the dust-proof air balanced, the dust-proof double acting. Complete tables are given, including a useful table of the free air consumption of the hoists.

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the shadow of Cathedral Mountain — the gem-like Emerald Lake Chalet — Glacier House, glacier rich — Hotel Sicamous, on the the Shores of Shuswap Lake — spacious, gracious Hotel Vancouver, at the Gateway to the Pacific — the Empress at Victoria, B. C., on Vancouver Island, with its atmosphere of old England — these hotels invite you this summer.

W. B. HOWARD, District Passenger Agent, Toronto

Canada-South Africa Direct Service

Regular monthly sailings from Montreal in Summer and St. John, N.B., in Winter, calling at Cape Town, Algoa Bay (Port Elizabeth), East London, Port Natal (Durban) and Delagoa Bay in the order named.

Sailings 20th of each month.

All steamers fitted with refrigerators for the carriage of perishable freight.

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Gasoline Tanks and Pumps, Pressure Tanks,
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Anything in Black or Galvanized Sheet Metal up to $\frac{1}{2}$ thick-
ness. Send blue print or rough drawing and get our prices.

Sheet Steel Sundries for manufacturers
is one of our specialties.

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The Steel Trough and Machine Co. Limited
TWEED, ONT., CANADA

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Regular monthly sailings from Montreal in summer and St. John in winter, calling at Auckland, Wellington, Lyttelton and Dunedin (New Zealand) and Melbourne and Sydney (Australia). Sailings 20th of each month.

Through bills of lading issued to all points in Australia, New Zealand, Tasmania and other islands of Oceania.

Marine Insurance effected at rates equal to those given from New York.

For rates and other information apply to

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LIMITED

213 Board of Trade Building, Montreal

Mr. Manufacturer

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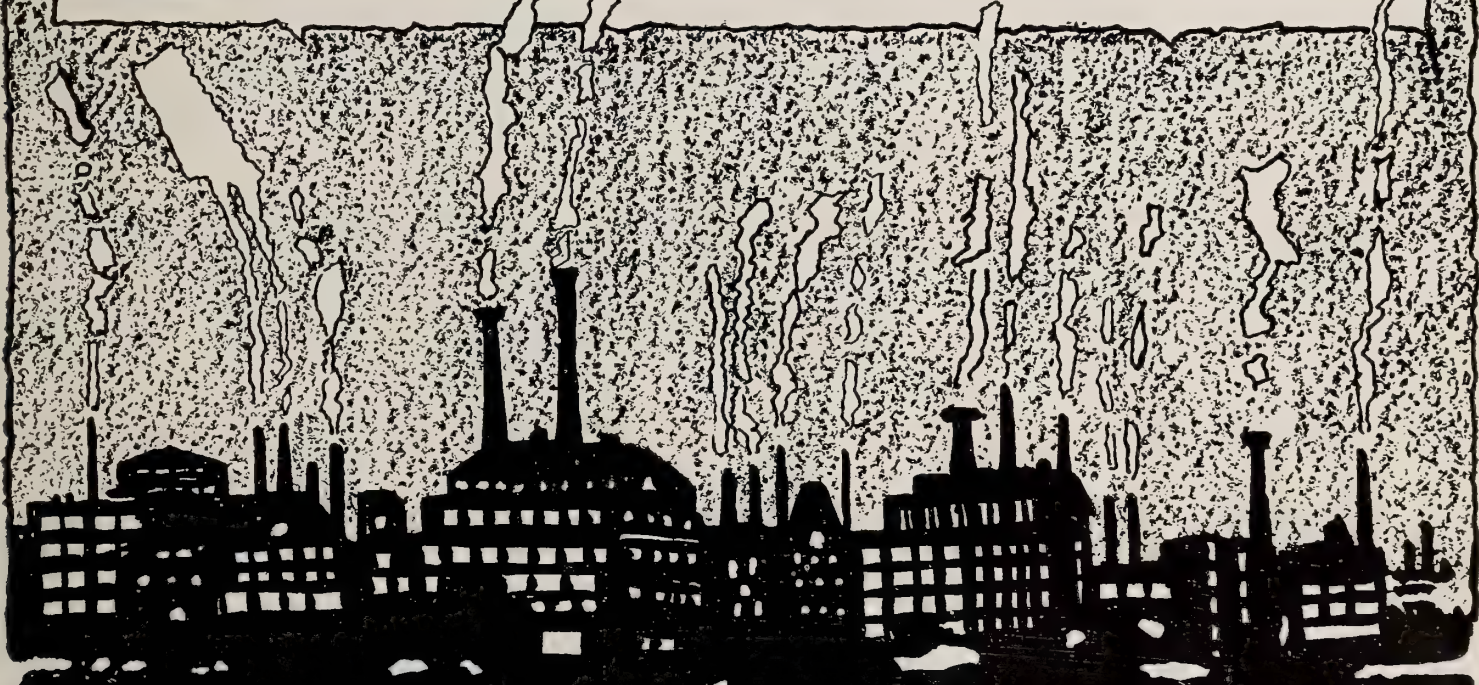
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ABRASIVE MATERIALS

- *Canadian Hart Wheels, Ltd., Hamilton, Ont.
- *Dominion Abrasive Wheel Co., New Toronto, Ont.

ABRASIVES

- *D. A. Brebner, Ltd., Toronto.

ACCOUNT BOOKS

- *The Brown Bros., Ltd., Toronto.

ACETYLENE BURNERS

- *The Prest-O-Lite Company.

ACETYLENE GAS

- *The Prest-O-Lite Company.

ACETYLENE GAS BURNERS

- Economic Acetylene Burner Co., Toronto.

ACIDS

- *The Grasselli Chemical Co., Ltd., Montreal.
- *The Nichols Chemical Co., Ltd., Montreal.

ADVERTISING NOVELTIES

- Lawson & Jones, Ltd., London, Ont.

AERATED BEVERAGES

- Charles Gurd & Co., Ltd., Montreal, Que.

- J. J. McLaughlin, Ltd., Toronto.

AIR COMPRESSORS

- *Canadian Ingersoll-Rand Co., Montreal, Que.

- *Smart-Turner Machine Co., Ltd., Hamilton, Ont.

AIR DRILLS

- *Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

ALCOHOL

- *Hiram Walker & Sons, Limited, Walkerville, Ont.

ALE

- E. L. Drewry, Winnipeg, Man.

ALUMINUM

- *Northern Aluminum Co., Ltd., 1805 Traders Bank, Toronto.

ALUMINUM CASTINGS

- *Tallman Brass & Metal Co., Hamilton, Ont.
- *United Brass & Lead, Ltd., Toronto

AMMONIA

- Canadian Ammonia Co., Ltd., Toronto.

ANGLE BARS

- *Burlington Steel Co., Ltd., Hamilton, Ont.
- *Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.
- *The Steel Company of Canada, Limited, Hamilton, Ont.

ASBESTOS:

- *Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEATHING:

- *Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEET AND PISTON PACKINGS

- *Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS STEAM PIPE AND BOILER COVERINGS

- *Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS TEXTILES:

- *Eureka Mineral Wool & Asbestos Co., Toronto.

ATTACHMENT PLUGS

- *Crouse-Hinds Co., Ltd., Toronto.

AUTOGRAPHIC REGISTERS

- *Autographic Register Co., Ltd., Montreal.

AUTOGRAPHIC REGISTER SYSTEMS

- Business Systems, Ltd., Toronto.

AUTOMATIC SCREW MACHINE PRODUCTS

- *United Brass & Lead, Ltd., Toronto

AUTOMOBILE ACCESSORIES,

- *Northern Electric Co., Limited, Montreal.

- *Tallman Brass & Metal Co., Hamilton, Ont.

AUTOMOBILE PARTS

- *Dominion Forge & Stamping Co., Walkerville, Ont.
- *United Brass & Lead, Ltd., Toronto

AWNING CORD (cotton)

- Hamilton Cotton Co., Hamilton, Ont.

AXLES

- Canada Forge Co., Ltd., Welland, Ont.
- Guelph Spring & Axle Co., Ltd., Guelph, Ont.

AXLES, carriage and automobile

- Guelph Spring & Axle Co., Ltd., Guelph, Ont.

BABBITT METAL

- Alonzo W. Spooner, Limited, Port Hope, Ont.

- *Dominion Metal Co., Ltd., Sherbrooke, P.Q.

- *The Canada Metal Co., Toronto.

- *Tallman Brass & Metal Co., Hamilton, Ont.

BACON

- E. W. Fearman Co., Ltd., Hamilton, Ont.

BAGS

- *Scythes & Co., Ltd., Toronto.

BAGS, Cotton

- The Canadian Bag Co., Ltd., Montreal, Que.

BAGS, jute

- The Canadian Bag Co., Ltd., Montreal, Que.

- *Scythes & Co., Ltd., Toronto.

BAGS, travelling

- J. Eveleigh & Co., Ltd., Montreal, Que.

- Lamontagne, Ltd., Montreal, Que.
- The M. Langmuir Mfg. Co., of Toronto, Ltd., Toronto.

BAKING JAPAN

- *Berry Bros., Ltd., Winnipeg, Man.

BAND RESAWS

- *Canada Machinery Corporation, Limited, Galt, Ont.

- *P. B. Yates Machine Co., Ltd., Hamilton, Ont.

BAND SAWS

- *E. C. Atkins & Co., Inc., Hamilton, Ont.

BANK AND OFFICE RAILINGS

- *The Geo. B. Meadows, Toronto, Wire, Iron & Brass Works Co., Ltd., Toronto.

- *Canada Wire and Iron Works, Hamilton, Ont.

BANK FITTINGS

- The Canadian Office & School Furniture Co., Ltd., Preston, Ont.

BANK RAILINGS and CAGES

- *Canada Wire and Iron Goods Co., Hamilton, Ont.

- *Dennis Wire & Iron Works Co., London.

BANK SIGNS AND FITTINGS

- *Tallman Brass & Metal Co., Hamilton, Ont.

BARRELS, steel, and containers

- *Smart-Turner Machine Co., Ltd., Hamilton, Ont.

BARS, iron

- London Rolling Mill Co., Limited, London, Ont.

BARS, steel

- London Rolling Mill Co., Limited, London, Ont.

BASEBALL GOODS

- A. J. Reach Co., Brantford, Ont.

BATHS, enamelled

- Amherst Foundry Co., Ltd., Amherst, N.S.

BATTERIES, dry

- The Canadian National Carbon Co., Ltd., Toronto.

- Canadian Carbon Company, Ltd., Toronto.

BEARINGS

- *The Chapman Double Ball Bearing Co., Ltd., Toronto.

- *The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEARINGS, bronze

- *Tallman Brass & Metal Co., Hamilton, Ont.

- *United Brass & Lead, Ltd., Toronto

BEARINGS, pillow block and upright

- *Canadian Fairbanks-Morse Company, Ltd., Montreal, Que.

- *Dodge Mfg. Co., Ltd., Toronto.

- *The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEARINGS

- *The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEDS, camp folding

- *Otterville Mfg. Co., Ltd., Otterville, Ont.

BEEF

- E. W. Fearman Co., Ltd., Hamilton, Ont.

BEER

- E. L. Drewry, Winnipeg, Man.

BELTING, chains

- *Canadian Link-Belt Co., Toronto.

- *Dodge Mfg. Co., Ltd., Toronto.

- *The Goldie & McCulloch Co., Ltd., Galt, Ont.

BELTING, elevator

- *Canadian Consolidated Rubber Co., Ltd., Montreal, Que.

- Dunlop Tire & Rubber Goods Co., Ltd., Toronto.

BELTING, leather

- The Beardmore Belting Co., Ltd., Toronto.

- *J. L. Goodhue & Co., Danville, P.Q.

- *Sadler & Howarth, Montreal.

- *The D. K. McLaren Belting Co., Ltd., Montreal.

- *The J. C. McLaren Belting Co., Ltd., Montreal.

BELTING, rubber

- *Canadian Consolidated Rubber Co., Ltd., Montreal, Que.

- *Dunlop Tire & Rubber Goods Co., Ltd., Toronto.

- *Gutta Percha & Rubber, Limited, Toronto.

BELTING, stitched cotton duck

- *Dominion Belting Co., Ltd., Hamilton.

BENT GOODS

- The Crown Lumber Co., Woodstock, Ont.

BICYCLES and ACCESSORIES

- *Canada Cycle and Motor Co., Ltd., Toronto.

BISCUITS

- The Montreal Biscuit Co., Montreal, Que.

BLACK SHEETS

- *A. C. Leslie & Co., Montreal.

BLANKETS

- Slingsby Mfg. Co., Ltd., Brantford, Ont.

- J. Walsham & Son, Ltd., Bolton, Ont.

BLANKETS, horse

- Slingsby Mfg. Co., Ltd., Brantford, Ont.

- J. Walsham & Son, Limited, Bolton, Ont.

BLASTING ACCESSORIES

- Canadian Explosives, Ltd., Montreal, Que.

BLEACHING POWDER

- Canadian Salt Co., Ltd., Windsor, Ont.

BLOWERS

- *Sheldons, Ltd., Galt, Ont.

- *The Canadian Blower & Forge Co., Limited, Kitchener, Ont.

- *Beveridge Paper Co., Limited, Montreal.

BOATS of ALL KINDS

- Peterboro Canoe Co., Ltd., Peterboro, Ont.

BOILER COMPOUND and OILS

- Electric Boiler Compound Co., Ltd., Guelph, Ont.

BOILER PRESERVATIVES

- *Beveridge Paper Co., Limited, Montreal.

BOILERS

- *M. Beatty & Sons, Ltd., Welland, Ont.

- *Darling Bros., Montreal.

- *Goldie & McCulloch Co., Limited, Galt, Ont.

- John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

- *Polson Iron Works, Ltd., Toronto.

- J. & R. Weir, Montreal, Que.

- Taylor-Forbes Co., Ltd., Guelph, Ont.

- *The Watrous Engine Works Co., Ltd., Brantford.

- BOILERS, hot water or steam.

- Steel & Radiation, Ltd., Toronto.

- Warden King, Ltd., Montreal, Que.

BOILERS, steam

- *Jenckes Machine Co., Sherbrooke, Que.

- *The Goldie & McCulloch Co., Ltd., Galt, Ont.

- Steel and Radiation Ltd., Toronto.

- Warden King, Ltd., Montreal, Que.

- *The Watrous Engine Works Co., Ltd., Brantford, Ont.

- BOILERS, steam and brass work

- *The Watrous Engine Works Co., Ltd., Brantford, Ont.

BOILER STANDS

- Anthes Foundry Ltd., Toronto.

BOLSTERS

- *Canadian Car & Foundry Co., Ltd., Montreal, Que.

BOLTS

- *The National Acme Mfg Co., Montreal, Que.

- *United Brass & Lead, Ltd., Toronto

BOLTS AND NUTS

- *The Canadian Tube & Iron Co., Ltd., Montreal, Que.

- *The Steel Company of Canada, Limited, Hamilton, Ont.

- Starr Mfg. Co., Ltd., Dartmouth, N.S.

- *United Brass & Lead, Ltd., Toronto

BOOKBINDERS

- R. G. McLean, Toronto.

- *The Brown Bros., Ltd., Toronto.

BOOKCASES

- *Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

- BOOKCASES, sectional (Gunn)

- The George McLagan Furniture Co., Ltd., Stratford, Ont.

BOOKLETS

- R. G. McLean, Toronto.

BOOKS, blank

- *The Brown Bros., Ltd., Toronto.

BOOTS AND SHOES

- Ames-Holden-McCreedy, Ltd., Montreal, Que.

- J. Leckie Co., Ltd.

- The John Ritchie Co., Ltd., Quebec, Que.

BOXES

- *Crouse-Hinds Co., Ltd., Toronto.

BOXES, cellular board:

- *The Thompson & Norris Co. of Canada, Ltd., Niagara Falls.

BOXES, rattle and soap

- The Arlington Co. of Canada, Ltd., Toronto.

BOXES, steel shop

BRASS BOLTS AND NUTS

*Tallman Brass & Metal Co., Hamilton, Ont.

*United Brass & Lead, Ltd., Toronto

BRASS AND BRONZE WIRE

*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

BRASS, BRONZE and ALUMINUM LETTERS

*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS ENGRAVERS

Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS FOUNDERS AND FINISHERS

*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.

*Tallman Brass & Metal Co., Hamilton, Ont.

*United Brass & Lead, Ltd., Toronto

BRASS GOODS

*Penberthy Injector Co., Ltd., Windsor.

*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.

*Mueller Mfg. Co., Sarnia.

The Garth Co., Montreal, Que.

The James Morrison Brass Mfg. Co., Ltd., Toronto.

*The Kerr Engine Co., Ltd., Walkerville, Ont.

*Tallman Brass & Metal Co., Hamilton, Ont.

*United Brass & Lead Ltd., Toronto.

BRASS PLATES

Geo. Booth & Son., Toronto.

*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS RODS

*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS RODS, SHEETS AND PLATES

*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

BRASS SIGNS AND MEMORIALS

*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS TUBING, seamless

Canadian Seamless Wire Co., Ltd., Toronto.

*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WIRE

Canadian Seamless Wire Co., Ltd., Toronto.

*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WORK, church

Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS WORK, special

Bawden Machine Co., Ltd., Toronto.

*H. Mueller Mfg. Co., Ltd., Sarnia, Ont.

*Tallman Brass & Metal Co., Hamilton, Ont.

*Booth-Coulter Copper & Brass Co., Ltd., Toronto.

*The Watrous Engine Works Co., Ltd., Brantford, Ont.

*United Brass & Lead, Ltd., Toronto

BRICK

National Brick Co. of Laprairie, Laprairie, P.Q.

Port Credit Brick Co., Port Credit.

BRICK, enamel

National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, pressed

National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, rubbing

*Canadian Hart Wheels, Limited, Hamilton, Ont.

BRICK, sewer

National Brick Co. of Laprairie, Laprairie, P.Q.

BRIDGES, Railway and Highway

*Dominion Bridge Co., Montreal.

*Hamilton Bridge Works Co., Ltd., Warkville, Ont.

*The Canadian Bridge Co., Ltd., Hamilton, Ont.

*McGregor & McIntyre, Ltd., Toronto.

*Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.

*Manitoba Bridge & Iron Works, Ltd., Winnipeg.

BROOMS

Simms, T. S., & Co., Limited, St. John, N.B.

Stevens-Hepner Co., Limited, Port Elgin, Ont.

BRONZE, SHEETS, RODS, PLATES

*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

BRUSHES

Simms, T. S., & Co., Limited, St. John, N.B.

Stevens-Hepner Co., Limited, Port Elgin, Ont.

BRUSHES, carbon

Canadian National Carbon Co., Ltd., Toronto.

BUCKET TANKS

*Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.

*The Bennett & Wright Co., Ltd., Toronto, Ont.

BUCKLES, shoe and coat

Parmenter & Bulloch Co., Limited, Gananoque, Ont.

BUILDING BLOCKS, vitrified, salt glazed

Standard Clay Products, Ltd., St. Johns, Que.

Toronto.

BUILDING FELT and PAPER

*Eureka Mineral Wool & Asbestos Co., Toronto.

*The Barrett Co., Ltd., Toronto and Montreal.

BUILDERS, ship

*Polson Iron Works, Limited, Toronto.

J. & R. Weir, Montreal, Que.

BURLAPS

The Canadian Bag Co., Limited, Montreal, Que.

*Scythes & Co., Ltd., Toronto.

BURLAPS, decorative

Dominion Oil Cloth Co., Limited, Montreal, Que.

CABLE ACCESSORIES

*Crouse-Hinds Co., Ltd., Toronto.

CABLES, electric light, power, telephone and telegraph

*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

CABLES, transmission and telephones

*Eugene F. Phillips Electrical Works, Ltd., Montreal, Que.

CABLES, Transmission and Cable

*Northern Electric Co., Limited, Montreal, Que.

CABLES, wire

The Dominion Wire Rope Co., Ltd., Montreal, Que.

*The B. Greening Wire Co., Ltd., Hamilton, Ont.

CALENDARS, ADVERTISING

NOVELTIES, etc.

Lawson & Jones, Limited, London, Ont.

CAMERAS

Canadian Kodak Co., Limited, Toronto.

CAMPERS' OUTFITTERS

Slingsby Mfg. Co., Ltd., Brantford, Ont.

CANADA SILVER

*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

CANOEES

Peterboro Canoe Co., Ltd., Peterboro, Ont.

*Canadian Canoe Co., Ltd., Peterborough.

CANS, baking powder, etc.

American Can Co., Montreal and Hamilton.

A. R. Whittall Can. Co., Ltd., Montreal.

CANS, fruit

American Can Co., Montreal and Hamilton.

A. R. Whittall Can. Co., Ltd., Montreal.

CANS, iron, lead and putty

A. R. Whittall Can. Co., Ltd., Montreal.

CANS, ROVING, ETC., fibre

*Beveridge Paper Co., Limited, Montreal.

CANS, tin

A. R. Whittall Can. Co., Ltd., Montreal.

American Can Co., Montreal and Hamilton.

CANVAS

*Scythes & Co., Ltd., Toronto.

CAPS, cloth

John W. Peck & Co., Ltd., Montreal, Que.

CARBIDE

*Canada Carbide Co., Ltd., Montreal, Que.

*Union Carbide Co. of Canada, Ltd. Works, Welland, Ont. Head Office, Toronto.

CARBON BRUSHES

Canadian Carbon Co., Limited, Toronto

CARBON PRODUCTS

Canadian Carbon Co., Limited, Toronto

CARBONS, arc light

Canadian Carbon Co., Limited, Toronto.

The Canadian National Carbon Co., Ltd.

CARBONS, flame

Canadian Carbon Co., Limited, Toronto.

CARBONS (headlight)

*Crouse-Hinds Co., Ltd., Toronto.

CARBONIC ACID GAS

Canadian Carbonate Co., Montreal.

CARD RECORD SYSTEMS

*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

CARPETS AND RUGS

Toronto Carpet Mfg. Co., Limited, Toronto.

CARPETS AND RUGS, Axminster and ingrain

Toronto Carpet Mfg. Co., Limited, Carpets and Rugs, Brussels and Wilton

Toronto Carpet Mfg. Co., Limited, Toronto.

CARPET YARNS, worsted and wool

Toronto Carpet Mfg. Co., Limited, Toronto.

CARRIAGES, baby, etc.

Canada Furniture Manufacturers, Ltd., Woodstock, Ont.

CARRIERS

*Richards-Wilcox Canadian Co., Limited, London, Ont.

CARRIERS, box and barrel

*Canadian Mathews Gravity Carrier Co., Limited, Toronto.

*Richards-Wilcox Canadian Co., Ltd., London, Ont.

CARS

*Canadian Car & Foundry Co., Ltd., Montreal, Que.

*National Steel Car Co., Limited, Hamilton, Ont.

CARS, industrial

Hamman Steel Car and Engineering Works, Hamilton.

CARTONS, lithographed

Harris Lithographing Co., Toronto.

CASTINGS

*Tallman Brass & Metal Co., Hamilton, Ont.

CASTINGS, aluminum

*Booth-Coulter Copper & Brass Co., Limited, Toronto.

*Crouse-Hinds Co., Ltd., Toronto.

*United Brass & Lead, Ltd., Toronto

*Tallman Brass & Metal Co., Hamilton, Ont.

CASTINGS, brass

*Booth-Coulter Copper & Brass Co., Limited, Toronto.

*Crouse-Hinds Co., Ltd., Toronto.

*Tallman Brass & Metal Co., Hamilton, Ont.

*United Brass & Lead, Ltd., Toronto

CASTINGS, brass and bronze

*Tallman Brass & Metal Co., Hamilton, Ont.

*United Brass & Lead, Ltd., Toronto

CASTINGS, grey iron

*Canadian Rumely Co., Limited, Toronto, Ont.

*Crouse-Hinds Co., Ltd., Toronto.

*Dodge Mfg. Co., Toronto.

*Canadian Car & Foundry Co., Ltd., Montreal, Que.

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.

John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

CASTINGS, malleable iron

*Crouse-Hinds Co., Ltd., Toronto.

*Galt Malleable Iron Co., Ltd., Galt, Ont.

CASTINGS, steel

*Canadian Steel Foundries, Ltd., Montreal, Que.

*Dominion Steel Foundry Co., Ltd., Hamilton, Ont.

*Hull Iron and Steel Foundry, Ltd., Hull, P.Q.

*Wm. Kennedy & Sons, Ltd., Owen Sound.

CATALOGUE MAKERS

Grip, Ltd., Toronto.

CAUSTIC SODA

Canadian Salt Co., Ltd., Windsor.

CELLBOARD

Adams Cellboard Co., Toronto.

CEMENT GUNS

Steel and Radiation, Ltd., Toronto.

CEMENT, HIGH TEMPERATURE

*Beveridge Paper Co., Ltd., Montreal.

CHAINS, for elevators, conveyors and drives

*Canadian Link-Belt Co., Toronto.

CHAIRS

*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

CHAIRS, assembly hall

Stratford Mfg. Co., Ltd., Stratford, Ont.

CHAIRS, folding

Stratford Mfg. Co., Ltd., Stratford, Ont.

CHAIRS, rattan and upholstered

Imperial Rattan Co., Ltd., Stratford, Ont.

CHAIR SEATS, fibre

*Beveridge Paper Co., Limited, Montreal.

CHECKS, swing checks, etc

*Mueller Mfg. Co., Ltd., Sarnia.

CHEMICALS

*The Grasselli Chemical Co., Ltd., Toronto.

*The Nichols Chemical Co., Ltd., Montreal, Que.

CHEMICAL LABORATORY**APPARATUS**

The Geo. M. Hendry Co., Limited, Toronto.

CHEMISTS, INDUSTRIAL

*Milton Hersey Co., Montreal.

CHICLETS AND CHEWING GUM

Canadian Chewing Gum Co., Ltd., Toronto.

CIGARETTES AND TOBACCO

Philip Morris & Co., Limited, Montreal, Que.

CIRCULAR CUTTERS, solid steel

*Galt Knife Co., Ltd.

The Peter Hay Knife Co., Limited, Galt, Ont.

CIRCULAR SAWS

*E. C. Atkins & Co., Inc., Hamilton, Ont.

CLAM SHELL BUCKETS

*M. Beatty & Sons, Ltd., Welland, Ont.

CLOCKS, TIME

*International Business Machines, Limited, Toronto.

CLOCKS, WATCHMEN'S

*The Bennett & Wright Co., Ltd., Toronto, Ont.

CLOSET SEATS

*Goderich Organ Co., Goderich, Ont.

CLOTHING

John W. Peck & Co., Ltd., Montreal, Que.

Mackenzie & Co., Ottawa, Ont.

CLOTHING, leather and sheepskin lined coats

*A. R. Clarke & Co., Ltd., Toronto.

CLOTHING, Mackinaw

The Carrs Mackinaw Clothing Co., Ltd., Orillia, Ont.

CLOTHES LINES, cotton

Hamilton Cotton Co., Hamilton, Ont.

CLUTCHES

*Dodge Mfg. Co., Ltd., Toronto.

CLUTCHES, conveyors

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

COAL

*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.

Standard Fuel Co., Toronto.

COAL CUTTERS

*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que

- COLORS**
Brandram-Henderson, Limited, Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.
- COMBS, fine dressing and name**
The Arlington Co. of Canada, Ltd., Toronto.
- COMMERCIAL STATIONERY**
*Brown Bros., Ltd., Toronto.
- CONCRETE COATINGS, PAINTS, ETC.**
*Beveridge Paper Co., Ltd., Montreal.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
The Imperial Varnish & Color Co., Limited, Toronto.
- CONDUITS FOR INTERIOR WIRING**
*Conduits Company Ltd., Toronto.
- CONDULET BOX FITTINGS**
*Crouse-Hinds Co., Ltd., Toronto.
- CONDULETS (Marine)**
*Crouse-Hinds Co., Ltd., Toronto.
- CONFECTIONERY**
Ganong Bros., Ltd., St. Stephens, N.B.
Moirs, Limited, Halifax, N.S.
The Montreal Biscuit Co., Montreal.
- CONTAINER BOARD—strong container**
Bathurst Lumber Co., Ltd., Bathurst, N.B.
- CONTRACTOR'S PLANT**
*M. Beatty & Sons, Ltd., Welland.
*Canadian Allis-Chalmers, Limited, Toronto.
- CONVEYORS**
*Canadian Link-Belt Co., Toronto.
*Canadian Mathews Gravity Carrier Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
- COPPER**
*Eugene F. Phillips, Electrical Works, Limited, Montreal.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.
- COPPER SHEETS, PLATES, BARS, RODS**
*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.
- COPPER SHEETS AND PLATES**
*Booth-Coulter Copper & Brass Co., Limited, Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.
- COPPERSMITHS**
*Booth-Coulter Copper & Brass Co., Limited, Toronto.
- COPPER TUBING, seamless**
Canadian Seamless Wire Co., Ltd., Toronto.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.
- COPPER WIRE**
Canadian Seamless Wire Co., Ltd., Toronto.
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.
- CORKS**
S. H. Ewing & Sons, Montreal, Que.
- CORK CARPET**
Dominion Oil Cloth Co., Ltd., Montreal, Que.
- CORRUGATED PAPER BOXES**
Adams Cellboard Co., Toronto.
Corrugated Paper Box Co., Ltd., Toronto.
*Hinde & Dauch Paper Co., Toronto.
*Martin Corrugated Paper & Box Co., Limited, Toronto.
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.
- CORUNDUM, artificial**
*D. A. Brebner, Ltd., Toronto.
- CORSETS**
Dominion Corset Co., Quebec, Que.
- COTTONS**
*Dominion Textile Co., Limited, Montreal, Que.
*Montreal Cottons, Ltd., Valleyfield, P.Q.
- COTTONADES**
Hamilton Cotton Co., Hamilton, Ont.
- COUPLERS**
*Canadian Steel Foundries, Ltd., Welland, Ont.
- COUPLINGS**
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Dodge Mfg. Co., Ltd., Toronto.
- CRANES**
*Northern Crane Works, Walkerville, Ont.
- CRANKSHAFTS**
Canada Forge Co., Ltd., Welland, Ont.
- CREAM CHEESE, Ingersoll**
The Ingersoll Packing Co., Limited, Ingersoll, Ont.
- CREAM SEPARATORS AND MILK CLARIFIERS**
De Laval Dairy Supply Co., Peterboro, Ont.
The Renfrew Machinery Co., Ltd., Renfrew, Ont.
- CREAMERY AND CHEESE FACTORY MACHINERY AND SUPPLIES**
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.
- CREOSOTED MATERIALS**
*The Barrett Co., Ltd., Toronto and Montreal.
- CRUSHED STONE**
The Hagersville Contracting Co., Limited, Hagersville, Ont.
- CRUSHING ROLLS**
*Jenckes Machine Co., Sherbrooke, Que.
- CUPOLAS**
*Sheldons, Ltd., Galt, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.
- CUPS, presentation**
Standard Silver Co., Toronto.
- CUPS, grease and oil**
*The Canadian Winkley Co., Ltd., Windsor, Ont.
- CURLED HAIR**
*Delany and Pettit, Ltd., Toronto.
- CURTAINS, chenille**
Hamilton Cotton Co., Hamilton, Ont.
- CUTLERY**
Standard Silver Co., Toronto.
- CUTTERS, (Machine)**
*Pratt & Whitney Co., Dundas.
- DECK PLUGS (electric marine)**
*Crouse-Hinds Co., Ltd., Toronto.
- DENIMS**
Hamilton Cotton Co., Hamilton, Ont.
- DERAILS**
*Canadian Hart Wheels, Limited, Hamilton, Ont.
- DESIGNERS**
Ontario Engraving Co., Hamilton, Ont.
- DESIGNERS AND PRINTERS OF BOOKLETS, ETC.**
Grip, Ltd., Toronto.
- DESKS**
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
- DESSICATED VEGETABLES**
Grahams Limited, Belleville.
- DIES**
*John Whitfield Co., Toronto.
- DINING ROOM SUITES**
The George McLagan Furniture Co., Limited, Stratford, Ont.
- DIES**
*Butterfield & Co., Rock Island, P.Q.
*Pratt & Whitney Co., Dundas.
- DISINFECTING APPARATUS**
Spramotor Co., London, Ont.
- DOOR HANGERS**
*Richards Wilcox Canadian Co., Ltd., London, Ont.
- DREDGES**
*M. Beatty & Sons, Limited, Welland, Ont.
- DRESSING, belt**
Sadler & Haworth, Montreal, Que.
- DRESS AND CLOAK TRIMMINGS**
J. Henry Peters Co., 1 Mincing St., Toronto.
- DRIFT BOLT DRIVERS**
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
- DRILL PRESSES**
*Canada Machinery Corporation, Limited, Galt, Ont.
- DRILL SHARPENERS**
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
- DRILLS**
*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.
*Pratt & Whitney Co., Dundas.
- DRILLS, core**
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
- DRILLS, pneumatic**
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
- DRILLS, rock**
*Canadian Ingersoll Rand Co., Montreal, Que.
- DRIFT BOLTS OR SPIKES**
London Rolling Mill Co., Limited, London, Ont.
- DROP FORGINGS**
*Canadian Billings & Spencer, Ltd., Welland, Ont.
- DROP HAMMERS**
*Canada Machinery Corporation, Limited, Galt, Ont.
- DRUMS, steel, and containers**
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
- DRY CELLS, electric**
Canadian Carbon Co., Limited, Toronto.
- DRY COLORS**
P. D. Dods & Co., Ltd., Montreal.
The Imperial Varnish & Color Co., Limited, Toronto.
R. C. Jamieson & Co., Ltd., Montreal, Que.
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
- DUMB WAITERS**
Turnbull Elevator Mfg. Co., Toronto.
- DURABLE WIRE ROPE**
The Dominion Wire Rope Co., Ltd., Montreal, Que.
- DYNAMITE**
Canadian Explosives, Limited, Montreal, Que.
- DYNAMOS**
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines, Ont.
- DYNAMOS, plating**
*Jones & Moore Electric Co., Ltd., Toronto.
- ELDERDOWN**
Galt Knitting Co., Ltd., Galt.
- ELECTRIC APPLIANCES**
*Canadian Crocker-Wheeler Co., Limited, St. Catharines, Ont.
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
- ELECTRIC APPLIANCES, fibre, all purposes**
*Beveridge Paper Co., Limited, Montreal.
- ELECTRICAL COMPOUNDS**
Standard Paint Co. of Canada, Ltd., Montreal, Que.
- ELECTRIC COOKING APPLIANCES**
*Canadian General Electric Company, Ltd., Toronto.
- ELECTRIC LAMPS**
Packard Electric Co., Limited, Toronto.
- ELECTRIC PLATE WARE**
Roden Bros., Ltd., Toronto.
- ELECTRIC BATTERIES**
Canadian Carbon Co., Limited, Toronto.
- ELECTRIC BRANDING TOOLS**
*The Clemens Electrical Corporation of Canada, Ltd., Hamilton, Ont.
- ELECTRIC RAILWAY EQUIPMENT**
*Crouse-Hinds Co., Ltd., Toronto.
- ELECTROPLATING**
*United Brass & Lead, Ltd., Toronto.
- ELECTRO PLATING**
Central Press Agency, Toronto.
- ELECTRICAL SUPPLIES**
*Canadian General Electric Company, Ltd., Toronto.
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
*Jones & Moore Electric Co., Ltd., Toronto.
*Northern Electric Co., Limited, Montreal, Que.
- ELECTRIC SOLDERING IRON**
*The Clemens Electrical Corporation of Canada, Ltd., Hamilton, Ont.
- ELECTRO-SILVER PLATED WARE**
Standard Silver Co., Toronto.
- ELEVATING MACHINERY**
*Canadian Link-Belt Co., Toronto.
*Canadian Mathews Gravity Carrier Co., Toronto.
- ELEVATORS**
*Jenckes Machine Co., Sherbrooke, Que.
*Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.
Turnbull Elevator Manufacturing Company, Toronto.
*The Watrous Engine Works Co., Ltd., Brantford, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.
- ELEVATORS FOR ALL PURPOSES**
*The Watrous Engine Works Co., Limited, Brantford, Ont.
- ELEVATOR GATES AND DOORS**
Turnbull Elevator Mfg. Co., Ltd., Toronto.
- ELEVATOR GUARDS**
*The Geo. B. Meadows, Toronto Iron and Brass Goods Works Co., Limited, Toronto.
*Canada Wire and Iron Works, Hamilton, Ont.
- ELEVATORS, hydraulic and electric**
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.
- EMERY DRESSERS and STANDS**
*Canadian Hart Wheels, Limited, Hamilton, Ont.
- EMERY GRINDERS**
*Canadian Hart Wheels, Limited, Hamilton, Ont.
- EMERY WHEELS**
*Canadian Hart Wheels, Limited, Hamilton, Ont.
- EMERY WHEEL GUARDS**
*Canadian Hart Wheels, Limited, Hamilton, Ont.
- ENAMELS**
R. C. Jamieson & Co., Limited, Montreal, Que.
The Imperial Varnish & Color Co., Ltd., Toronto.
- ENAMEL MANUFACTURERS AND DECORATORS**
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
- ENAMEL AND TIN WARE**
McClary Mfg. Co., London, Ont.
- ENGINES**
*E. Leonard & Sons, London, Ont.
*Goldie & McCulloch Co., Limited, Galt, Ont.
J. & R. Weir, Montreal, Que.
*Jenckes Machine Co., Sherbrooke, Que.
*Polson Iron Works, Limited, Toronto.
*Sheldons, Ltd., Galt, Ont.
*The Watrous Engine Works Co., Limited, Brantford, Ont.
- ENGINES, gas and gasoline**
*Canadian Fairbanks-Morse Company, Ltd., Montreal, Que.
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Hamilton Motor Works Ltd., Hamilton.
- ENGINES, steam plowing and threshing**
*Massey-Harris Co., Ltd., Toronto.
- ENGINES, gasoline, tractor, plowing and threshing**
*Sawyer-Massey Co., Ltd., Hamilton, Ont.
- ENGINES, hoisting**
*M. Beatty & Sons, Welland, Ont.
- ENGINES, oil, gasoline and kerosene**
*Golson Manufacturing Co., Ltd., Guelph.
- ENGINES, steam plowing and threshing**
Sawyer-Massey Co., Limited, Hamilton, Ont.
- ENGRAVERS**
Grip, Limited, Toronto.
Ontario Engraving Co., Hamilton.
- ELECTRICAL AND GAS FIXTURES**
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Limited, Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.
- ELECTRIC HEATING APPLIANCES**
*Canadian General Electric Company, Ltd., Toronto.
- ELEVATORS**
*Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.
- ENGRAVERS, half-tone**
Grip, Limited, Toronto.
Ontario Engraving Co., Hamilton, Ont.
- ENGRAVERS, wood**
Ontario Engraving Co., Hamilton, Ont.
- ENGRAVERS AND PRINTERS steel plate**
American Bank Note Co., Ottawa, Ont.
- ENGRAVERS AND PRINTERS banknote**
American Bank Note Co., Ottawa, Ont.
- ENGRAVING**
*J. L. Jones Engraving Company, Toronto.
- ENGRAVING, copper and steel plate**
Pritchard-Andrews Co. of Ottawa Limited, Ottawa, Ont.
- ENSLAGE AND STRAW CUTTERS**
J. Fleury's Sons, Aurora, Ont.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
- EVAPORATED APPLES**
Grahams Limited, Belleville.
- ENVELOPES**
Barber-Ellis Co., Ltd., Toronto.
Canada Envelope Co., Montreal, Que.

EXCELSIOR

*Delany & Pettit, Ltd., Toronto.

EXCELSIOR PADS*Delany & Pettit, Ltd., Toronto.
*Parmenter & Bulloch Co., Limited,
Gananoque, Ont.**EXPERTS IN PATENT CAUSES**

Ridout & Maybee, Toronto.

EXPLOSIVES, high

Canadian Explosives Ltd., Montreal.

FACE PLATE JAWS

Ker & Goodwin, Brantford, Ont.

FACTORY SUPPLIES, cheese andcreamery
De Laval Dairy Supply Co., Ltd.,
Montreal, Que.**FANS***Sheldons, Limited, Galt, Ont.
*The Canadian Blower & Forge Co.,
Limited, Kitchener, Ont.**FASTENERS, belt**

*Sadler & Haworth, Montreal, Que.

FELTS, pulp and paper makers

Ayers Limited, Lachute Mills, P.Q.

*Beveridge Paper Co., Limited
Montreal.**FENCES AND GATES***Dennis Wire & Iron Works Co.,
London, Ont.*Canada Wire and Iron Works
Hamilton, Ont.**FENCING AND GATES, woven**wire
*Canada Wire and Iron Goods Co.,
Hamilton, Ont.**FENCING, wire**C. H. Johnson & Sons, Limited,
Montreal, Que.**FIBRE PAILS***The E. B. Eddy Co., Ltd., Hull,
Que.**FIBRE, VULCANIZED, hard and**flexible
*Beveridge Paper Co., Limited,
Montreal.**FILES**Henry Disston & Sons, Limited,
Toronto.

*The Nicholson File Co., Port Hope.

FILING CABINETS

*Office Specialty Co., Newmarket.

FILING EQUIPMENT, wood & steel*Office Specialty Mfg. Co., Ltd.,
Newmarket, Ont.**FILING SYSTEMS***Office Specialty Mfg. Co., Ltd.,
Newmarket, Ont.**FILTER PAPERS***Beveridge Paper Co., Limited,
Montreal.**FIRE ALARMS***Northern Electric Co., Limited,
Montreal, Que.**FIRE APPARATUS**

*R. S. Bickle Co., Woodstock, Ont.

FIRE BRICKDominion Fire Brick and Clay Pro-
ducts, Ltd., Moose Jaw**FIRE BRICK AND CEMENT***Beveridge Paper Co., Ltd., Mon-
treal.**FIRE BRICK AND CLAY**The Dominion Fire Brick and Clay
Products, Ltd., Moose Jaw, Sask.**FIRE BRICK, JOINTLESS***Beveridge Paper Co., Ltd., Mont-
real.**FIRECLAY**

*Jas. W. Foley & Co., St. John, N.B.

FIRE DOOR HARDWARE*Richards Wilcox Canadian Co.
Limited, London, Ont.**FIRE DOORS**

*A. B. Ormsby Co., Ltd., Toronto.

*The Pedlar People Limited,
Oshawa.**FIRE ENGINES**

*R. S. Bickle Co., Woodstock, Ont.

Waterous Engine Works Co., Lim-
ited, Brantford, Ont.**FIRE ESCAPES***Canada Wire and Iron Goods Co.,
Hamilton, Ont.*Dennis Wire & Iron Works Co.,
London, Ont.*McGregor & McIntyre, Ltd., To-
ronto.**FIRE EXTINGUISHERS**

*A. B. Ormsby Co., Ltd., Toronto.

*Booth-Coulter Copper and Brass
Co., Limited, Montreal, Que.*The Bennett & Wright Co., Ltd.,
Toronto, Ont.**FIRE FIGHTING APPARATUS***The Waterous Engine Works Co.,
Limited, Brantford, Ont.**FIRE HOSE***Canadian Consolidated Rubber
Co., of Canada, Limited, Montreal,
Que.Dunlop Tire & Rubber Goods Co.,
Ltd., Toronto.*Gutta Percha and Rubber, Ltd.,
Toronto.**FIRE PREVENTION MATERIAL***Chicago Bridge & Iron Works,
Bridgeburg, Ont.*Eureka Mineral Wool & Asbestos
Co., Toronto.*The Bennett & Wright Co., Ltd.,
Toronto, Ont.**FIRE PROOF WINDOWS AND**

DOORS

*A. B. Ormsby Co., Ltd., Toronto.

*Pedlar People, Ltd., Oshawa, Ont.

*Trussed Concrete Steel Co. of
Canada, Limited, Walkerville, Ont.**FIRE SPRINKLER SYSTEMS***Chicago Bridge & Iron Works,
Bridgeburg, Ont.*The Bennett & Wright Co., Ltd.,
Toronto, Ont.

*Purdy Mansell Co., Toronto.

*H. G. Vogel Co., Montreal, Que.

FIRE AND WATER DEPARTMENT

SUPPLIES

*Chicago Bridge & Iron Works,
Bridgeburg, Ont.

The Garth Co., Montreal, Que.

FISH, Atlantic Sea-FoodsMaritime Fish Corporation Ltd.,
Montreal, Que.**FITTINGS FOR SOIL PIPE**

Anthes Foundry, Ltd., Toronto.

FITTINGS, steam

Warden King, Ltd., Montreal, Que.

FIXTURES

*Crouse-Hinds Co., Ltd., Toronto.

FLAGS

*Scythes & Co., Limited, Toronto.

FLASHLIGHTS

Canadian Carbon Co., Toronto.

FLEXIBLE COUPLINGS*Canadian Bond Hanger & Coup-
ling Co., Alexandria, Ont.**FLOODLIGHTS (electric)**

*Crouse-Hinds Co., Ltd., Toronto.

FLOORING, hardwoodSeaman Kent Co., Ltd., Meaford,
Ont.**FLOUR MILL MACHINERY***Canadian Allis-Chalmers, Limited,
Toronto.**FLUE LINERS**Standard Clay Products, Ltd., St.
Johns, Que.**FORGES***Canadian Blower & Forge Co., Ltd.,
Kitchener, Ont.

*Sheldons, Limited, Galt, Ont.

FORGINGS

Canada Forge Co., Ltd., Welland.

*The Steel Co. of Canada, Limited,
Hamilton, Ont.**FORGINGS, drop***Canadian Billings & Spencer, Ltd.,
Welland, Ont.*Dominion Forge and Stamping
Co., Walkerville, Ont.**FOUNDRY EQUIPMENT***Northern Crane Works, Limited,
Walkerville, Ont.**FOUNTAIN FRUITS and Juices**

J. J. McLaughlin, Ltd., Toronto.

FOUNTAINS, drinking

*Mueller Mfg. Co., Ltd., Sarnia.

FRICTION CLUTCH PULLEYS

*Dodge Mfg. Co., Ltd., Toronto.

FROGS AND CROSSINGS,manganese
Canadian Ramapo Iron Works, Ltd.,
Niagara Falls, Ont.**FUEL**

Standard Fuel Co., Toronto.

FUR GARMENTS, men's andwomen's
Holt, Renfrew, Ltd., Quebec.**FUR GOODS**John W. Peak & Co., Limited,
Montreal, Que.**FUR TRIMMINGS, ornaments and**buttons
J. Henry Peters Co., 1 Mincing St.,
Toronto.**FURNACES**

McClary Mfg. Co., London, Ont.

The Jas. Smart Mfg. Co., Limited,
Brockville, Ont.**FURNACES, hot air**

Bedford Stove Co., Bedford, Que.

FURNACES, oil burning*Mechanical Engineering Works,
Montreal, Que.**FURNITURE, hall**The George McLagan Furniture Co.,
Limited, Stratford, Ont.**FURNITURE, office**The Canadian Office and School
Furniture Co., Ltd., Preston, Ont.**FURNITURE, reed and rattan**Imperial Rattan Co., Ltd., Strat-
ford, Ont.**FUSE BOXES**

*Crouse-Hinds Co., Ltd., Toronto.

FUSE PLUGS AND FUSES, refill-able
*The Clemens Electrical Corpora-
tion of Canada, Ltd., Hamilton, Ont.**FUSES***Economy Fuse and Mfg. Co., Mon-
treal.**GALVANIZED IRON**

*A. C. Leslie & Co., Montreal.

GALVANIZED SHEETS*Dominion Sheet Metal Co., Ham-
ilton, Ont.**GALVANIZERS**Acme Stamping & Tool Works, Ltd.,
Hamilton, Ont.*Ontario Wind Engine and Pump
Co., Limited, Toronto.

*The Pedlar People, Ltd., Oshawa.

GASOLINE ENGINES*Ontario Wind & Pump Co., Ltd.,
Toronto.De Laval Dairy Supply Co., Ltd.,
Peterboro, Ont.**GASOLINE FIRE ENGINES***The Waterous Engine Works Co.,
Ltd., Brantford, Ont.**GASOLINE MOTORS, "Imperial"**Marine
Bruce Stewart & Co., Ltd., Char-
lottetown, P.E.I.**GASOLINE, storage systems***Steel Trough and Machine Co., Ltd.,
Tweed, Ont.**GASOLINE STORAGE SYSTEMS,**special underground
S. F. Bowser & Co., Toronto.**GASOLINE***The Imperial Oil Co., Limited,
Toronto.**GAUGES***Brown Engineering Corporation,
Toronto.

*John Whitfield Co., Toronto.

GEARS, cut*Brown Engineering Corporation,
Toronto.

*Hamilton Gear & Machine, Toronto.

*Winnipeg Gear & Engineering
Co., Ltd., Winnipeg.**GEARS, noiseless fibre, also rein-**forced
*Beveridge Paper Co., Limited,
Montreal.**GELATINE**Canada Gelatine Co., Ltd., Brant-
ford.**GENERATORS***Canadian Crocker-Wheeler Co.,
Ltd., St. Catharines, Ont.*Canadian Westinghouse Co., Ltd.,
Hamilton, Ont.**GENERATORS, electric***Canadian General Electric Com-
pany, Ltd., Toronto.**GINs**The Melchers Gin & Spirits Dis-
tillery Co., Ltd., Montreal, Que.**GLASSWARE**Dominion Glass Co., Limited, Mon-
treal, Que.**GLASSWARE, cut**

Roden Bros., Ltd., Toronto.

GLASS FOR BUILDINGSToronto Plate Glass Importing Co.,
Limited, Toronto.**GLASS BENDERS**Toronto Plate Glass Importing Co.,
Limited, Toronto.**GLASS, mirror**Toronto Plate Glass Importing Co.,
Limited, Toronto.**GLOVES AND MITTS**

*A. R. Clarke & Co., Ltd., Toronto.

Craig, Cowan Co., Ltd., Toronto.

GLUE

Canada Glue Co., Ltd., Brantford.

*Delany and Pettit, Ltd., Toronto.

GOLD-FILLED WIRE ANDPLATE
Canadian Seamless Wire Co., To-
ronto.**GOLD AND SILVER REFINERS**Canadian Seamless Wire Co., To-
ronto.**GRAIN CRUSHERS (Rapid Easy)**

J. Fleury's Sons, Aurora, Ont.

GRAPE JUICE

J. J. McLaughlin, Ltd., Toronto.

The Welch Co., Ltd., St. Catharines.

GRATES*The Goldie & McCulloch Co., Ltd.,
Galt, Ont.**GRAVITY CARRIERS***Canadian Mathews Gravity Carrier
Co., Toronto.**GRILLES, metal***Canada Wire & Iron Goods Co.,
Hamilton, Ont.*Dennis Wire & Iron Works Co.,
London, Ont.**GRINDER, bench***Canadian Bond Hanger & Coup-
ling Co., Alexandria, Ont.**GRINDERS, portable***Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.**GRINDERS, Pedestal and Bench***Canadian Hart Wheels, Limited,
Hamilton, Ont.**GRINDING and Polishing Machinery***Canadian Hart Wheels, Limited,
Hamilton, Ont.**GRINDING WHEELS***Canadian Hart Wheels, Limited,
Hamilton, Ont.*The Dominion Abrasive Wheel
Co., Limited, New Toronto.**GRINDSTONES***Richards-Wilcox Canadian Co.,
Limited, London, Ont.**GUARDS (Condulet)**

*Crouse-Hinds Co., Ltd., Toronto.

GUNN SECTIONAL BOOKCASESThe Geo. McLagan Furniture Co.,
Limited, Stratford, Ont.**GUY ANCHORS**

B. J. Coghlin Co., Ltd., Montreal.

GUY RODS

*Crouse-Hinds Co., Ltd., Toronto.

GYPNUM, crushed

*Albert Mfg. Co., Hillsborough, N.B.

GYPNUM PRODUCTS*Manitoba Gypsum Co., Ltd., Win-
nipeg, Man.De Laval Dairy Supply Co., Ltd.,
Peterboro, Ont.**HACK SAW BLADES***E. C. Atkins & Co., Inc., Hamil-
ton, Ont.**HACK SAW FRAMES***E. C. Atkins & Co., Inc., Hamil-
ton, Ont.**HACK SAW MACHINES***E. C. Atkins & Co., Inc., Hamil-
ton, Ont.**HALL FURNITURE**The Geo. McLagan Furniture Co.,
Limited, Stratford, Ont.**HAMS**F. W. Fearman Co., Ltd., Hamil-
ton, Ont.**HANDLES (Axe, pick, sledge ham-**mers, etc.)
The Lachute Shuttle Co., Limited,
Lachute Mills, P.Q.**HANDLES, wood***Toy Products Ltd., Farm Point,
P.Q.**HAND SAWS***E. C. Atkins & Co., Inc., Hamil-
ton, Ont.**HANGERS***Canadian Bond Hanger & Coup-
ling Co., Alexandria, Ont.

*Dodge Mfg. Co., Ltd., Toronto.

*The Goldie & McCulloch Co., Ltd.,
Galt, Ont.**HARDWARE***Richards-Wilcox Canadian Co.,
Limited, London, Ont.

Taylor-Forbes Co., Limited, Guelph.

The Jas. Smart Mfg. Co., Limited,
Brockville, Ont.**HARDWOOD FLOORING**Wilson Bros. Limited, Collingwood,
Ont.**HARDWOOD INTERIOR FINISH**Wilson Bros., Ltd., Collingwood,
Ont.

HEATERS

*Waterous Engine Works Co., Ltd., Brantford, Ont.

HEATERS, feed water

*Darling Bros., Ltd., Montreal.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

HEATING APPLIANCES

*C. A. Dunham Co., Ltd., Toronto.
*Darling Bros., Ltd., Montreal.
*Sheldons, Limited, Galt, Ont.
*The Canadian Blower & Forge Co., Limited, Kitchener, Ont.

HEATING SYSTEMS

*C. A. Dunham Co., Ltd., Toronto.

HEMLOCK, union and oak sole

Breithaupt Leather Co., Ltd., Kitchener, Ont.

HESSIANS

The Canadian Bag Co., Limited, Montreal, Que.
*Scythes & Co., Limited, Toronto.

HINGES

*The Steel Co. of Canada, Limited, Hamilton, Ont.

HOISTS

*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOISTS, electric and pneumatic

*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
*M. Beatty & Sons, Ltd., Welland, Ont.

*Northern Crane Works, Limited, Walkerville, Ont.

HOISTING MACHINERY

*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
*M. Beatty & Sons, Ltd., Welland, Ont.

*Northern Crane Works, Limited, Walkerville, Ont.

HOSE, fire

*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.

*Gutta Percha & Rubber, Ltd., Toronto.

HOSE, half, Imperial

Kingston Hosiery Co., Ltd., Kingston, Ont.

HOSE, rubber

*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.

*Gutta Percha & Rubber, Limited, Toronto.

HYDRAULIC PRESSES

*Bawden Machine Co., Limited, Toronto.

*William R. Perrin, Ltd., Toronto.

HYDRO ELECTRIC PLANTS

*Canadian Allis-Chalmers, Limited, Toronto.

ICE CREEPERS

Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ICE-MAKING MACHINERY

The Linde Canadian Refrigeration Co., Limited, Montreal, Que.

INCUBATORS & BROODERS

Lee Mfg. Co., Ltd., Pembroke, Ont.

INGOT METALS

*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

INJECTORS, automatic and autopoitive

Penberthy Injector Co., Limited, Windsor, Ont.

INSERTED TOOTH SAWS

*E. C. Atkins & Co., Inc., Hamilton, Ont.

INSULATING COMPOUNDS

The Imperial Varnish & Color Co., Ltd., Toronto.

INSULATING PAPER AND FIBRE

*Beveridge Paper Co., Limited, Montreal.

INSULATORS

*Crouse-Hinds Co., Ltd., Toronto.

INTERLOCKING RUBBER TILING

*Gutta Percha & Rubber Mfg. Co. of Toronto, Limited, Toronto.

INVERTS

Standard Clay Products, Ltd., St. Johns, Que.

IRON

*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.

IRON, refined bar

Starr Mfg. Co., Ltd., Dartmouth, N.S.

IRON AND STEEL BARS

*Burlington Steel Co., Ltd., Hamilton, Ont.

*The Steel Co. of Canada, Limited, Hamilton, Ont.

IRON STAIRWAYS

*Canada Wire & Iron Goods Co., Hamilton, Ont.

*Dennis Wire & Iron Works Co., London, Ont.

*McGregor & McIntyre, Ltd., Toronto.

IRONWORK, architectural

*Canadian Allis-Chalmers, Limited, Toronto.

*Canada Wire & Iron Goods Co., Hamilton, Ont.

IRONWORK, ornamental

*Canada Wire & Iron Goods Co., Hamilton, Ont.

IRON, LEAD AND PUTTY

A. R. Whittall, Montreal, Que.

JACKS

Globe Engineering Co., Ltd., Hamilton

JAM, canned goods, etc.

E. D. Smith & Son, Limited.

JAPANS, enamels, etc.

A. Muirhead Co., Ltd., Toronto.

The Imperial Varnish & Color Co., Ltd., Toronto.

JIGS AND TOOLS

*Brown Engineering Corporation, Toronto.

JOINTERS

*Canada Machinery Corporation, Limited, Galt, Ont.

*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

JELLY POWDER

S. H. Ewing & Sons, Montreal, Que.

JEWELRY, enamelled souvenir

Caron Bros., Montreal, Que.

JEWELRY, gold-filled

Caron Bros., Montreal, Que.

JOIST HANGERS

*Richards-Wilcox Canadian Co., Limited, London, Ont.

JUNCTION BOXES, cable

*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

KELSEY WARM AIR GENERATOR

The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

KILNS

*Sheldons, Limited, Galt, Ont.

KINDLING

Standard Fuel Co., Toronto.

KNIFE GRINDERS

*Canada Machinery Corporation, Limited, Galt, Ont.

*W. H. Banfield & Sons, Toronto.

KNITTED GOODS

*Penman's, Limited, Paris, Ont.

KNIVES

*Galt Knife Co., Ltd.

Henry Disston and Sons, Toronto

The Peter Hay Knife Co., Limited, Galt, Ont.

Simonds Canada Saw Co., Limited, Montreal, Que.

KNIVES, pulp and paper

Henry Disston and Sons, Toronto.

The Peter Hay Knife Co., Limited, Galt, Ont.

KODAKS AND PHOTOGRAPHIC SUPPLIES

Canadian Kodak Co., Ltd., Toronto

LABELS

Lawson & Jones, Ltd., London, Ont.

LABELS, lithographed

Harris Lithographing Co., Toronto

LACE LEATHER

F. O. McCordick, St. Catharines, Ont.

*Sadler & Haworth, Montreal, Que.

*The D. K. McLaren Belting Co., Limited, Montreal, Que.

*The J. C. McLaren Belting Co., Limited, Montreal, Que.

LADDERS

Stratford Mfg. Co., Ltd., Stratford, Ont.

LADDERS, step.

*Otterville Mfg. Co., Ltd., Otterville, Ont.

LADLES, foundry

*Northern Crane Works, Limited, Walkerville, Ont.

LAGER

E. L. Drewry, Winnipeg, Man.

LAMP GLOBES

*Crouse-Hinds Co., Ltd., Toronto.

LARD

F. W. Fearman Co., Ltd., Hamilton, Ont.

LATH

The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

LATHE CHUCKS

Ker & Goodwin, Brantford, Ont.

LATHE-DOGS

Canadian Billings & Spencer, Ltd., Welland, Ont.

LATHES

*Canada Machinery Corporation, Limited, Galt, Ont.

LAUNCHES

Peterboro Canoe Co., Ltd., Peterboro, Ont.

LAWN MOWERS

Taylor-Forbes Co., Limited, Guelph, Ont.

LAWN SWINGS

Stratford Mfg. Co., Ltd., Stratford, Ont.

LAVATORIES, enameled

Amherst Foundry Co., Limited, Amherst, N.S.

LAUNDRY SINKS

Amherst Foundry Co., Limited, Amherst, N.S.

LEAD GRINDERS

Benjamin Moore & Co., Limited, Toronto.

LEAD SHEET

Toronto Plate Glass Importing Co., Limited, Toronto.

LEAD PIPE

*The Steel Co. of Canada, Limited, Hamilton, Ont.

Toronto Plate Glass Importing Co., Limited, Toronto.

*The Canada Metal Co., Toronto.

*United Brass & Lead, Ltd., Toronto

LEATHER

The Robson Leather Co., Limited, Oshawa, Ont.

LEATHER, bookbinders'

Clarke & Clarke, Ltd., Toronto.

LEATHER, fancy

Clarke & Clarke, Ltd., Toronto.

LEATHER GOODS

Lamontagne, Ltd., Montreal, Ont.

LEATHER, hemlock, union and oak sole

The Breithaupt Leather Co., Ltd., Kitchener, Ont.

LEATHER, patent colt and side leather

*A. R. Clarke & Co., Ltd., Toronto.

Clarke & Clarke, Ltd., Toronto.

LEATHER, upholstery

Clarke & Clarke, Ltd., Toronto.

LEATHER, upper

A. Davis & Son, Ltd., Kingston, Ont.

LIGHTS (marine, side and port)

*Crouse-Hinds Co., Ltd., Toronto.

LINK BELT, Burt, and sawmill riveted

*Canadian Link-Belt Co., Toronto.

LINK BELTING

*The Dodge Mfg. Co., Ltd., Toronto.

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

LINOLEUM

Dominion Oil Cloth Co., Limited, Montreal, Que.

LITHOGRAPHED BUSINESS STATIONERY

Business Systems, Ltd., Toronto.

LITHOGRAPHED TIN WARE

*MacDonald Mfg. Co., Limited, Toronto.

LITHOGRAPHERS

American Bank Note Company, Ottawa, Ont.

Harris Lithographing Co., Toronto.

LOCKERS

*Canada Wire & Iron Works Co., Hamilton, Ont.

*Dennis Wire & Iron Works Co., London, Ont.

*Geo. B. Meadows, Wire, Iron and Brass Works Co., Toronto.

LOCOMOTIVE BLOCKS

Standard Clay Products, Limited, St. Johns, Que.

LOCOMOTIVES, industrial

*Montreal Locomotive Works, Ltd., Montreal, Que.

LOCOMOTIVE & MARINE BRASS WORKS

The James Morrison Brass Mfg. Co., Limited, Toronto

*United Brass & Lead, Ltd., Toronto

LOOSE LEAF, BINDERS AND FORMS

Business Systems, Ltd., Toronto.

LOOSE LEAF SYSTEMS

Copeland-Chatterton Co., Limited, Brampton, Ont.

LOOSE LEAF SUPPLIES

The Esdale Press, Ltd., Edmonton.

LUBRICATORS, steam sight feed
Penberthy Injector Co., Limited, Windsor, Ont.

LUGS, for silos and water tanks

*Ontario Wind Engine & Pump Co., Ltd., Toronto.

*Otterville Mfg. Co., Ltd., Otterville, Ont.

LUMBER

*Brown Corporation, La Tuque, Que.

The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

G. & J. Esplen, Montreal, Que.

LUMBER, asbestos

*Eureka Mineral Wool & Asbestos Co., Toronto.

LUMBER, spruce and pine, cedar

railway ties and shingles

Bathurst Lumber Co., Ltd., Bathurst, N.B.

LUMBERING BLANKETS

Slingsby Mfg. Co., Ltd., Brantford, Ont.

LUMBER, red pine and spruce

Gillies Bros., Ltd., Braeside, Ont.

LUMBER, spruce, fir, larch and cedar

Fernie Lumber Co., Ltd., Fernie, B.C.

LUMBER, white pine

Gillies Bros., Ltd., Braeside, Ont.

MACHINE KNIVES

*Galt Knife Co., Ltd.

*E. C. Atkins & Co., Inc., Hamilton, Ont.

MACHINE TOOLS

*Canada Machinery Corporation, Limited, Galt, Ont.

*John Bertram & Sons Co., Ltd., Dundas, Ont.

*United Brass & Lead, Ltd., Toronto

MACHINE WORK, special

*United Brass & Lead, Ltd., Toronto

MACHINE WORK, special and repairs

*Canadian Rumely Co., Limited, Toronto, Ont.

MACHINERY, conveying

*Canadian Link-Belt Co., Toronto.

*Canadian Mathews Gravity Carrier Co., Limited, Toronto.

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

MACHINERY, flour mill

*Canadian Fairbanks-Morse Company, Ltd., Montreal, Que.

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

MACHINERY, grinding

*Canadian Hart Wheels, Limited, Hamilton, Ont.

MACHINERY, hoisting, etc.

*Polson Iron Works, Limited, Toronto.

J. & R. Weir, Montreal, Que.

*M. Beatty & Sons, Ltd., Welland.

*Northern Crane Works, Limited, Walkerville, Ont.

MACHINERY, ice cream

J. J. McLaughlin, Ltd., Toronto.

MACHINERY, iron working

*Canada Machinery Corporation, Limited, Galt, Ont.

*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, pulp mill

*The Waterous Engine Works Co., Limited, Brant

- MACHINERY, special**
Bawden Machine Co., Limited, Toronto.
- MACHINERY, tannery**
W. P. Plant, Hastings, Ont.
- MACHINERY, transmission**
*Canadian Bond Hanger and Coupling Co., Ltd., Alexandria, Ont.
*Dodge Mfg. Co., Ltd., Toronto.
*Goldie & McCulloch Co., Limited, Galt, Ont.
- MACHINERY, woodworking**
*Canada Machinery Corporation, Limited, Galt, Ont.
*Yates, P. B., Machine Co., Ltd., Hamilton, Ont.
Preston Woodworking Machinery Co., Ltd., Preston.
*The Watrous Engine Works Co., Limited, Brantford, Ont.
- MACHINE WORK, special and repairs**
*Canadian Rumely Co., Ltd., Toronto, Ont.
- MACHINE WRENCHES**
*Canadian Billings & Spencer, Ltd., Welland, Ont.
- MACHINES, painting**
Spramotor Co., London, Ont.
- MAGNESITE**
Canadian Carbonate Co., Limited, Montreal, Que.
- MALT**
*Hiram Walker & Sons, Limited, Walkerville, Ont.
- MAPLE PRODUCTS**
*Maples, Limited, Toronto.
- MAPS AND MAP MOUNTING**
The Geo. M. Hendry Co., Limited, Toronto.
- MARTINGALE RINGS AND SLIDE LOOPS**
The Arlington Co. of Canada, Ltd., Toronto.
- MATCHERS**
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
- MATCHES**
*The E. B. Eddy Co., Ltd., Hull.
- MECHANICAL STOKERS**
*The Jones Underfeed Stoker Co., Ltd., Toronto.
- MEDICINES, patented and pharmaceutical**
Dr. Ed. Morin & Cie., Ltd., Quebec.
- METAL, babbitt**
*Canada Metal Co., Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.
Alonzo W. Spooner, Limited, Port Hope, Ont.
- METAL CEILING**
*The Pedlar People Limited, Oshawa.
- METAL LATH**
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
*The Pedlar People Limited, Oshawa.
- METAL PACKING**
*Garlock Packing Company, Hamilton, Ont.
- METAL, spinning and stamping**
The Booth-Coulter Copper and Brass Co., Limited, Toronto.
- METAL SAWS**
*E. C. Atkins & Co., Inc., Hamilton, Ont.
- METAL SHINGLES**
*The Pedlar People Limited, Oshawa.
- MILK DEALERS' MACHINERY AND SUPPLIES**
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.
- MILLBOARD, asbestos**
*Eureka Mineral Wool & Asbestos Co., Toronto.
- MILLING CUTTERS**
Pratt and Whitney Company of Canada, Dundas, Ont.
- MINING MACHINERY**
*Canadian Allis-Chalmers, Limited, Toronto.
- MITTS AND GLOVES (Indian, tanned deerskins)**
Holt, Renfrew Ltd., Quebec, Que.
A. R. Clarke & Co., Ltd., Toronto
- MOCCASINS AND SLIPPERS (Indian tanned leathers)**
Holt, Renfrew Ltd., Quebec, Que.
- MORTISERS**
*Canada Machinery Corporation, Limited, Galt, Ont.
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
- MOTOR CARS**
*Ford Co. of Canada, Ford, Ont.
- MOTORS, electric**
*Canadian General Electric Company, Ltd., Toronto.
- MOTORS, electric (alternating current)**
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*Canadian Crocker-Wheeler Co., Ltd., St. Catharines, Ont.
*T. & H. Electric Co., Hamilton.
- MOTORS, electric (direct current)**
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*T. & H. Electric Co., Hamilton.
- MOTORS, electric (repairing)**
Consolidated Electric Co., Limited, Toronto.
- MOTORS, pneumatic**
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
- MOULDERS**
*Canada Machinery Corporation, Limited, Galt, Ont.
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
- NAILS**
*The Steel Co. of Canada, Limited, Hamilton, Ont.
- NAILS, copper**
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.
- NAILS, wire**
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.
- NAPHTHA**
*The Imperial Oil Co., Limited, Toronto.
- NICKEL OXIDE**
Coniagas Reduction Co., Limited, St. Catharines, Ont.
- NUTS**
*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.
*The National Acme Mfg. Co., Montreal, Que.
*The Steel Co. of Canada, Limited, Hamilton, Ont.
*United Brass & Lead, Ltd., Toronto
- OAKUM, plumbers, Canadian Navy**
Factory Waste and Metal Co., Montreal, Que.
- OAT CRUSHERS AND FLAKERS**
J. Fleury's Sons, Aurora, Ont.
- OFFICE DESKS**
*Goderich Organ Co., Goderich, Ont.
- OFFICE EQUIPMENT**
*Office Specialty Co., Newmarket, Ont.
- OFFICE FURNITURE**
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
- OILS**
Brandram-Henderson, Ltd., Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.
Sherwin-Williams Co. of Canada, Limited, Montreal, Que.
- OIL FILTRATION AND CIRCULATING SYSTEMS**
S. F. Bowser & Co., Toronto.
- OIL STORAGE SYSTEMS, self-measuring**
S. F. Bowser & Co., Toronto.
- OIL COMPANIES**
*Canadian Oil Co., Toronto.
Commercial Oil Co., Ltd., Hamilton, Ont.
*Imperial Oil Co., Toronto.
- OILS (Petroleum products)**
*British American Oil Co., Limited, Toronto.
*The Imperial Oil Co., Limited, Toronto.
- OTTS, road**
*The Barrett Co., Ltd., Toronto and Montreal.
- OILCLOTHS, floor and table**
Dominion Oil Cloth Co., Limited, Montreal, Que.
- ORGANS**
*Goderich Organ Co., Goderich, Ont.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.
Thomas Organ & Piano Co., Woodstock, Ont.
- ORGANS, pipe**
Cassavant Freres, St. Hyacinthe, Que.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.
- ORGANS, parlor**
*Goderich Organ Co., Goderich, Ont.
- ORNAMENTAL IRON WORK**
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*The Geo. B. Meadows, Toronto Iron and Brass Goods Works Co., Limited, Toronto.
*McGregor & McIntyre, Ltd., Toronto.
- OVENS, portable bake**
Bedford Stove Co., Bedford, Que.
Mackenzie & Co., Ottawa, Ont.
Peerless Overall Co., Rock Island, Que.
Walker Pant and Shirt Co., Walkerville and Chatham, Ont.
The Standard Shirt Co., Limited, Montreal, Que.
- OVERCOATINGS**
Rosamond Woollen Co., Almonte, Ont.
- OVERHEAD RUNWAYS**
*Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.
*Richards-Wilcox Canadian Co., Limited, London, Ont.
- OXY-ACETYLENE WELDING**
*L'Air Liquide Society, Montreal.
*The Prest-O-Lite Co., Inc., Toronto.
- OXYGEN**
*L'Air Liquide Society, Montreal.
- PACKERS, parchment papers, discs, shavings**
*Beveridge Paper Co., Limited, Montreal.
- PACKING BOXES**
Barchard & Co., Limited, Toronto.
- PACKING, engine**
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Garlock Packing Co., Hamilton.
- PACKING, rubber**
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
- PAIS AND TUBS, wooden**
The C. Beck Mfg. Co., Limited, Penetanguishene, Ont.
- PAINTERS' SUPPLIES**
A. Muirhead Co., Ltd., Toronto.
- PAINTS**
R. C. Jamieson & Co., Limited, Montreal, Que.
- PAINTS and VARNISHES**
A. Muirhead Co., Ltd., Toronto.
Benjamin Moore & Co., Limited, Toronto.
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
The Imperial Varnish & Color Co., Limited, Toronto.
The Staneland Co., Ltd., Victoria, B.C.
A. Ramsay & Sons Co., Montreal, Que.
Standard Paint Co. of Canada, Limited, Montreal, Que.
- PAINTS, barn and bridge**
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
- PAINTS, preservative**
Standard Paint Co. of Canada, Limited, Montreal, Que.
*The Barrett Co., Ltd., Toronto and Montreal.
- PANELBOARDS**
*Crouse-Hinds Co., Ltd., Toronto.
- PAPER BAGS**
*Beveridge Paper Co., Limited, Montreal.
- PAPER, book**
Barber Paper & Coating Mills, Ltd., Georgetown, Ont.
- PAPER BOXES**
King Paper Box Co., Ltd., Montreal, Que.
*Rudd Paper Box Co., Limited, Toronto.
- PAPER, coated, book and label**
*Provincial Paper Mills, Limited, Georgetown, Ont.
- PAPER, coated box board**
*Provincial Paper Mills, Limited, Georgetown, Ont.
- PAPER, coated cover**
*Provincial Paper Mills, Limited, Georgetown, Ont.
- PAPER, envelope**
Provincial Paper Mills Limited, Georgetown, Ont.
The Toronto Paper Manufacturing Co., Cornwall, Ont.
- PAPER, enamelled blotting**
*Provincial Paper Mills, Limited, Georgetown, Ont.
- PAPER, kraft and all wrappings, printings and specialties**
*Beveridge Paper Co., Limited, Montreal.
- PAPER, label**
*Provincial Paper Mills, Limited, Georgetown, Ont.
- PAPER, ledger**
*Howard Smith Paper Mills, Ltd., Montreal.
- PAPER, news**
*The Riordon Pulp and Paper Co., Montreal, Que.
- PAPER, super-book**
The Toronto Paper Manufacturing Co., Cornwall, Ont.
- PAPER, wall**
Stauntons, Ltd., Toronto.
- PAPER, Waxed**
Business Systems, Ltd., Toronto.
- PAPER, wrapping, printing and specialties**
*The Riordon Pulp and Paper Co., Montreal, Que.
- PAPER, writing**
The Toronto Paper Manufacturing Co., Cornwall, Ont.
Howard Smith Paper Mills, Limited, Montreal.
- PAPER, bond**
*Howard Smith Paper Mills, Ltd., Montreal.
- PAPER, wrapping, printing and specialties**
*Rolland Paper Co., Ltd., Montreal, Que.
- PAPER, building**
Bathurst Lumber Co., Ltd., Bathurst, N.B.
- PAPER, writing**
*The Riordon Pulp and Paper Co., Montreal, Que.
- PAEK SEATS**
Stratford Mfg. Co., Ltd., Stratford, Ont.
- PARLOR SUNDRIES**
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.
- PATENTS**
Fetherstonhaugh & Co., Toronto.
Ridout and Maybee, Toronto.
- PATENT LITIGATION**
Ridout and Maybee, Toronto.
- PAY ROLL AUDITS**
*International Business Machines, Limited, Toronto.
- PEAS AND BEANS FOR SEED**
W. P. Niles, Ltd., Wellington, Ont.
- PERFORATED METALS**
*Canada Wire & Iron Goods Co., Hamilton, Ont.
- PERFORATED MUSIC ROLLS**
The Otto Higel Co., Ltd., Toronto.
- PERFUMES AND TOILET PREPARATIONS**
Sovereign Perfumes Ltd., Toronto.
- PETROLEUM PRODUCTS**
*The Imperial Oil Co., Limited, Toronto.
- PHOTOMAILERS**
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.
- PIANOS**
Dominion Organ & Piano Co., Ltd., Bowmanville, Ont.
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.
- PIANO ACTIONS**
The Otto Higel Co., Ltd., Toronto.
- PIANO KEYS**
The Otto Higel Co., Ltd., Toronto.
- PIANOS, player**
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.
- PIANO, player actions**
The Otto Higel Co., Ltd., Toronto.
- PIANO STOOLS and BENCHES**
*Goderich Organ Co., Goderich, Ont.
- PIG IRON**
*The Steel Co. of Canada, Limited, Hamilton, Ont.
- PINE DOORS, SASH, MOULDINGS, ETC.**
Wilson Bros., Limited, Collingwood, Ont.
- PINS, society, emblems and badges**
Caron Bros., Montreal, Que.

PIPE, cast iron, for water and gas
National Iron Works, Ltd., Toronto.

PIPE COUPLINGS

*The Steel Co. of Canada, Limited,
Hamilton, Ont.

PIPE COVERINGS

*Eureka Mineral Wood & Asbestos
Co., Toronto.

PIPE ORGANS

Karn-Morris Piano and Organ Co.,
Limited, Woodstock, Ont.

PIPES, culvert

Standard Clay Products, Ltd., St.
Johns, Que.

*The Pedlar People Limited,
Oshawa.

PIPE AND NIPPLES black and galvanized

*Canadian Tube & Iron Co., Ltd.,
Montreal, Que.

PIPE, sewer

Hamilton and Toronto Sewer Pipe
Co., Limited, Hamilton, Ont.

Standard Clay Products, Ltd., St.
Johns, Que.

PIPE, soil and fittings

Anthes Foundry, Ltd., Toronto and
Winnipeg.

Warden King Ltd., Montreal, Que.

PIPE AND TUBES, wrought

*Page-Hersey Iron Tube and Lead
Co., Ltd., Toronto.

PIPE, threading and cutting off machines

John H. Hall & Sons, Limited,
Brantford, Ont.

PISTON RODS

*The Canadian Drawn Steel Co.,
Limited, Hamilton, Ont.

*Union Drawn Steel Co., Limited,
Hamilton, Ont.

PLANERS

*Canada Machinery Corporation,
Limited, Galt, Ont.

*P. B. Yates Machine Co., Ltd.,
Hamilton, Ont.

PLANING MILLS

G. & J. Esplen, Montreal, Que.

PLASTERING TROWELS

*E. C. Atkins & Co., Inc., Hamil-
ton, Ont.

PLOWS

J. Fleury's Sons, Aurora, Ont.

PLUGS

*Crouse-Hinds Co., Ltd., Toronto.

PLUMBERS' SUPPLIES

The Garth Co., Montreal, Que.

The James Morrison Brass Mfg
Co., Ltd., Toronto.

*United Brass & Lead, Ltd., Toronto

PLUMBING APPLIANCES

Standard Sanitary Mfg. Co., Ltd.,
Limited, Toronto.

PLUMBING SUPPLIES

Toronto Plate Glass Importing Co.
Limited, Toronto.

PNEUMATIC DRILLS

*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

PNEUMATIC MACHINERY

*Canadian Ingersoll-Rand Co., Sher-
brooke, P.Q.

POLE LINE MATERIAL (wooden insulator top pins, side blocks, pole steps, cross arms)

The Lachute Shuttle Co., Limited
Lachute Mills, P.Q.

POLES, Flag

*Ontario Wind Engine & Pump Co.
Ltd., Toronto.

POLES, telegraph and telephone, cedar

Fernie Lumber Co., Ltd., Fernie
B.C.

PORK PACKERS AND CHEESE EXPORTERS

The Ingersoll Packing Co., Limited
Ingersoll, Ont.

POSTS, split cedar fence

Fernie Lumber Co., Ltd., Fernie
B.C.

POULTRY SUPPLIES AND MEDICINES

Lee Mfg. Co., Ltd., Pembroke, Ont

POWDER, blasting

Canadian Explosives, Ltd., Mont-
real, Que.

POWER PRESSES

Hydraulic Machinery Co., Limited,
Montreal.

*William R. Perrin, Ltd., Toronto

PRESERVATIVE PAINT

*Trussed Concrete Steel Co. of
Canada, Limited, Walkerville, Ont.

PRESERVATIVE PAINT FOR BOILERS

*Beveridge Paper Co., Limited,
Montreal.

PRESSES, baling and filter

*William R. Perrin, Ltd., Toronto.

PRESSES, hydraulic

Hydraulic Machinery Co., Limited,
Montreal.

PRESSES, sheet metal stamping

Brown, Boggs Co., Ltd., Hamilton,
Ont.

*Canada Machinery Corporation,
Limited, Galt, Ont.

PRESSES, veneer

*Canada Machinery Corporation,
Limited, Galt, Ont.

Hydraulic Machinery Co., Limited,
Montreal.

*William R. Perrin, Ltd., Toronto.

PRINTERS

Rous & Mann, Ltd., Toronto.

PRINTING AND LITHOGRAPHING

Lawson & Jones, Limited, London
Ont.

PULLEYS

*Canadian Bond Hanger & Coup-
ling Co., Alexandria, Ont.

*Canadian Fairbanks-Morse Com-
pany, Ltd., Montreal, Que.

*Dodge Mfg. Co., Ltd., Toronto.

*The Goldie & McCulloch Co., Ltd.,
Galt, Ont.

PULLEYS, wood split.

*Bernard Industrial Co., Fortier-
ville, P.Q.

PULP, bleached sulphite

The Edward Partington Pulp and
Paper Co., St. John, N.B.

PULP, sulphate and sulphite

Bathurst Lumber Co., Ltd., Bath-
urst, N.B.

PULP

*Brown Corporation, La Tuque,
Que.

PUMPS

*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

*Canadian Allis-Chalmers, Limited
Toronto.

*Bawden Machine Co., Ltd., Toronto.

*Canadian Fairbanks-Morse Com-
pany, Limited, Montreal, Que.

*Darling Bros., Ltd., Montreal.

*Ontario Wind Engine & Pump Co.,
Ltd., Toronto.

*Smart-Turner Machine Co., Ltd.,
Hamilton, Ont.

*Spromotor Co., London, Ont.

PUMPS, boiler feed

*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

*Bawden Machine Co., Ltd., Toronto.

*Smart-Turner Machine Co., Ltd.,
Hamilton, Ont.

*The Goldie & McCulloch Co., Ltd.,
Galt, Ont.

PUMPS, centrifugal

*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

*M. Beatty & Sons, Ltd., Welland,
Ont.

*Smart-Turner Machine Co., Ltd.,
Hamilton, Ont.

*Watrous Engine Works Co., Ltd.,
Brantford, Ont.

PUMPS, iron

*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

*Goold-Shapley-Muir Co., Limited,
Brantford, Ont.

*Smart-Turner Machine Co., Ltd.,
Hamilton, Ont.

*Watrous Engine Works Co., Ltd.,
Brantford, Ont.

PUMPS, turbine and reciprocating

*Bawden Machine Co., Ltd., Toronto.

*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

*Smart-Turner Machine Co., Ltd.,
Hamilton, Ont.

John McDougall, Caledonian Iron
Works Co., Ltd., Montreal, Que.

PUNCHES

*John Whitfield Co., Toronto.

*Pratt & Whitney Co., Dundas.

PYROMETERS

*Canadian Hoskins Co., Walker-
ville, Ont.

RADIATORS

Taylor-Forbes Co., Limited, Guelph,
Ont.

RAILINGS, brass and iron

*Dennis Wire & Iron Works Co.,
London, Ont.

RAILS, light

*United Brass & Lead, Ltd., Toronto

RAILS, heavy

Hamant Steel Car and Engineer-
ing Works, Hamilton.

RAILWAY SIGNAL APPLIANCES

General Railway Signal Co. of Can-
ada, Ltd., Montreal, Que.

RAILWAY SUPPLIES

*Canadian Steel Foundries, Ltd.,
Montreal, Que.

*Chicago Bridge & Iron Works,
Bridgeburg, Ont.

B. J. Coghlin Co., Ltd., Montreal,
Que.

RAILWAY TARIFF BINDERS

The Esdale Press Ltd., Edmonton.

READY-TO-WEAR GARMENTS, LADIES'

H. C. Boulter Co., Ltd., Toronto.

REAMERS

*Pratt & Whitney Co., Dundas.

*Butterfield & Co., Rock Island, P.Q.

RECEPTACLES

*Crouse-Hinds Co., Ltd., Toronto.

*"REDWOOD" lager

E. L. Drewry, Winnipeg, Man.

REED AND RATTAN GOODS

Canada Furniture Mfgs., Limited,
Woodstock, Ont.

REFRIGERATORS

Sanderson-Harold Co., Ltd., Paris,
Ont.

Lee Mfg. Co., Ltd., Pembroke, Ont.

REFRIGERATING MACHINERY

The Linde Canadian Refrigeration
Co., Ltd., Montreal, Que.

REFRIGERATORS, store, homes and institutions

Ham & Nott Co., Ltd., Brantford,
Ont.

John Hillock & Co., Ltd., Toronto.

REINFORCEMENT BARS

*Burlington Steel Co., Ltd., Hamil-
ton, Ont.

*The Steel Co. of Canada, Limited,
Hamilton, Ont.

*Trussed Concrete Steel Co., Ltd.,
Walkerville.

REINFORCEMENT FOR CONCRETE

*Canada Wire & Iron Goods Co.,
Hamilton, Ont.

*Trussed Concrete Steel Co. of
Canada, Limited, Walkerville, Ont.

REINFORCEMENT FOR CONCRETE ROOFING, Metal.

*The Pedlar People Limited,
Oshawa.

*Trussed Concrete Steel Co., Ltd.,
Walkerville.

REVOLVING DOORS

*A. B. Ormsby Co., Ltd., Toronto.

RINGS, gold

Caron Bros., Montreal, Que.

RIVETERS, pneumatic

*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

RIVETS

*Canadian Tube & Iron Co., Ltd.,

*The Steel Co. of Canada, Limited,
Hamilton, Ont.

RIVETS, bifurcated and tubular

Parmenter & Bulloch Co., Limited,
Gananoque, Ont.

RIVETS AND BURS, iron, copper and brass

Parmenter & Bulloch Co., Limited,
Gananoque, Ont.

ROCK DRILLS

*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

ROLL PRINTING

*Autographic Register Co., Ltd.,
Montreal.

Business Systems, Ltd., Toronto.

ROOFING, ready to lay

Standard Paint Co. of Canada, Ltd.,
Montreal, Que.

*The Barrett Co., Ltd., Toronto and
Montreal.

ROOFINGS, plastic and liquid

*Beveridge Paper Co., Limited,
Montreal.

ROOF TRUSSES

*The Canadian Bridge Co., Ltd.,
Walkerville, Ont.

*Dominion Bridge Co., Ltd., Mon-
treal, Que.

ROPE

*Doon Twines Ltd., Doon, Ont.

*Shurly & Derrett, Ltd., Toronto.

ROPE, cotton

Hamilton Cotton Co., Hamilton,
Ont.

RUBBER FOOTWEAR

Ames Holden, McCready, Limited,
Montreal, Que.

*Gutta Percha & Rubber, Ltd.

The Miner Rubber Co., Limited,
Granby, Que.

RUBBER GOODS

*Canadian Consolidated Rubber Co.,
Limited, Montreal, Que.

*Dunlop Tire & Rubber Goods Co.,
Ltd., Toronto.

*Gutta Percha & Rubber, Ltd.

RUBBER MOULDS

Bawden Machine Co., Ltd., Toronto.

RUBBER PACKING

*Dunlop Tire & Rubber Goods Co.,
Ltd., Toronto.

*Garlock Packing Company, Hamil-
ton, Ont.

RULES

The Lufkin Rule Co. of Canada,
Ltd., Windsor, Ont.

RYE

The St. Hyacinthe Distillery Co.,
Ltd., St. Hyacinthe, Que.

SADDLERY HARDWARE

*Dominion Forge and Stamping
Co., Walkerville, Ont.

SAFES

*Goldie & McCulloch Co., Limited,
Galt, Ont.

J. & J. Taylor, Ltd., Toronto.

SAMPLE CASES

The M. Langmuir Mfg. Co. of To-
ronto, Ltd., Toronto.

J. Eveleigh & Co., Ltd., Montreal,
Que.

SAND RAMMERS

*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

*P. B. Yates Machine Co., Ltd.,
Hamilton, Ont.

SANDPAPER

*Delany and Pettit, Ltd., Toronto.

SASH CORD, cotton

Hamilton Cotton Co., Hamilton,
Ont.

SALT

Canadian Salt Co., Ltd., Windsor,
Ont.

SANITARY PAPER TOWELS

*E. B. Eddy Co., Ltd., Hull, Que.

SAW SHARPENING MACHINERY

*Canadian Hart Wheels, Limited,
Hamilton, Ont.

SAWS

*E. C. Atkins & Co., Ltd., Hamilton.

Henry Disston & Sons, Limited,
Toronto.

Shurly & Deitrich, Galt, Ont.

*Canada Machinery Corporation,
Limited, Galt, Ont.

*P. B. Yates Machine Co., Ltd.,
Hamilton, Ont.

SERGES

Rosamond Woollen Co., Almonte,
SHAFTING

Canada Forge Co., Ltd., Welland,
*Canadian Bond Hanger & Coup-
ling Co., Alexandria, Ont.
*Canadian Drawn Steel Co., Ltd.,
Hamilton, Ont.
*The Goldie & McCulloch Co., Ltd.,
Galt, Ont.
*Union Drawn Steel Co., Limited,
Hamilton, Ont.
*Dodge Mfg. Co., Ltd., Toronto.

SHANTY BLANKETS

Slingsby Mfg. Co., Ltd., Brantford.

SHAPERS

*Canada Machinery Corporation,
Limited, Galt, Ont.
*P. B. Yates Machine Co., Ltd.,
Hamilton, Ont.

SHEAR BLADES, iron

*Galt Knife Co., Ltd.
The Peter Hay Knife Co., Limited,
Galt, Ont.

SHEATHING

*The Barrett Co., Ltd., Toronto and
Montreal.

SHEATHING, asbestos corrugated
*Eureka Mineral Wool & Asbestos
Co., Toronto.

SHEET METAL STAMPINGS

Acme Stamping & Tool Works, Ltd.,
Hamilton, Ont.
*The Pedlar People Limited,
Oshawa.

*W. H. Banfield & Sons, Ltd., To-
ronto.

SHEETS, ETC.

*Tallman Brass & Metal Co., Hamil-
ton, Ont.

SHEETS, galvanized

*Dominion Sheet Metal Co., Ltd.,
Hamilton.
*The Pedlar People Limited,
Oshawa.

SHINGLES

Bathurst Lumber Co., Ltd., Bath-
urst, N.B.

SHINGLE SAWS

*E. C. Atkins & Co., Inc., Hamil-
ton, Ont.

SHIRTS

MacKenzie & Co., Ottawa, Ont.
John W. Peck & Co., Ltd., Mon-
treal, Que.

SHIRTS, workmen's

*A. R. Clarke & Co., Ltd., Toronto.

SHOE PEGWOOD

O. Chalifour, Quebec, Que.

SHOE LININGS

Galt Knitting Co., Ltd., Galt, Ont.

SHOES, running and athletic

Ames-Holden-McCready, Ltd., Mon-
treal, Que.

SHOOKS

Barchard & Co., Ltd., Montreal.

SILENT CHAIN DRIVES

*Canadian Link-Belt Co., Toronto.

SILVER BULLION

Coniagas Reduction Co., Ltd., St.
Catharines, Ont.

SILVERSMITH

Canadian Wm. A. Rogers, Ltd.,
Toronto.

Standard Silver Co., Toronto.

SILVERWARE, sterling

Roden Bros., Limited, Toronto.

SINKS, enamelled

Amherst Foundry Co., Limited,
Amherst, N.S.

SKATES, figure

Canada Cycle and Motor Co., Ltd.,
Toronto.

SKATES, genuine Acme

Canada Cycle and Motor Co., Ltd.,
Toronto.

SKATES, hockey

Canada Cycle and Motor Co., Ltd.,
Toronto.

SKATES, ice

Canada Cycle and Motor Co., Ltd.,
Toronto.

SKATE SHARPENERS

*Canadian Bond Hanger & Coup-
ling Co., Alexandria, Ont.

SKIFFS

Peterboro Canoe Co., Ltd., Peter-
boro, Ont.

SKYLIGHTS

*A. B. Ormsby Co., Ltd., Toronto.
*The Pedlar People Limited,
Oshawa.

SLEIGHS

Tudhope-Anderson Co., Limited,
Orillia, Ont.

SLIPPERS

Ames-Holden-McCready, Ltd., Mon-
treal, Que.

SLOTTERS

*Canada Machinery Corporation,
Limited, Galt, Ont.

SMELTER LINING

*Beveridge Paper Co., Ltd., Mont-
real.

SMOKE CONSUMERS

*The Jones Underfeed Stoker Co.,
Ltd., Toronto.

SMOKE-STACKS

*Steel Trough and Machine Co., Ltd.,
Tweed, Ont.

SOAPS

J. Barsalou & Co., Ltd., Montreal,
Que.

SOAP (soft, oil)

The Imperial Varnish & Color Co.,
Ltd., Toronto.

Sherwin-Williams Co. of Canada,
Limited, Montreal, Que.

SOCKETS

*Crouse-Hinds Co., Ltd., Toronto.

SODA WATER FOUNTAINS

J. J. McLaughlin, Ltd., Toronto.

SOIL PIPE

Anthes Foundry, Ltd., Toronto.

SOLDER

Alonzo W. Spooner, Ltd., Port
Hope, Ont.

*Canada Metal Co., Toronto.

*Tallman Brass & Metal Co., Ham-
ilton, Ont.

SOLDER, silver

Geo. H. Lees & Co., Hamilton.

SOLDER, wire and bar

*American Can Co., Montreal, and
Hamilton.

SOLDERING IRONS AND

COPPERS
Brown, Boggs Co., Ltd., Hamilton
Ont.

SNOWSHOES

Helt, Renfrew, Ltd., Quebec, Que.

SPARK PLUGS

Canadian Carbon Co., Limited,
Toronto.

SPECIAL MACHINERY

Globe Engineering Co., Ltd., Hamil-
ton

SPIKES, railway and marine

Starr Mfg. Co., Ltd., Dartmouth,
N.S.

SPIRAL CONVEYORS

*Canadian Mathews Gravity Carrier
Co., Ltd., Toronto.

*The Goldie & McCulloch Co., Ltd.,
Galt, Ont.

SPLIT PEAS

H. Murton, Ltd., Guelph, Ont.

SPIRITS

*Hiram Walker & Sons, Limited,
Walkerville, Ont.

SPORTING MEDALS AND

TROPHIES
Roden Bros., Limited, Toronto.

SPRAYERS

Spramotor Co., London, Ont.

SPRING COTTEES

*Richards-Wilcox Canadian Co.,
Limited, London, Ont.

SPRINGS

*Canadian Steel Foundries, Ltd.,
Montreal, Que.

B. J. Coghlin Co., Ltd., Montreal,
Que.

Guelph Spring & Axle Co., Ltd.,
Guelph, Ont.

SPRINGS, carriage and automobile
Guelph Spring & Axle Co., Ltd.,
Guelph, Ont.

SPRINKLER SYSTEMS

*Chicago Bridge & Iron Works,
Bridgeburg, Ont.

*The Bennett & Wright Co., Ltd.,
Toronto, Ont.

*Purdy, Manell, Ltd., Toronto.

*Vogel Co. of Canada, Ltd., Mont-
real, Que.

SPROCKET WHEELS

*Canadian Link Belt Co., Ltd.,
Toronto.

STAINS

R. C. Jamieson & Co., Ltd., Mont-
real, Que.

STAINS, creosote shingle

A. Muirhead Co., Ltd., Toronto.

STAMPINGS

*Dominion Forge and Stamping
Co., Ltd., Walkerville, Ont.

STAMPS, steel, brass and rubber
Pritchard-Andrews Co. of Ottawa,
Ltd., Ottawa, Ont.

STAMP MILLS

*Jenckes Machine Co., Sherbrooke.

STATIONERY, office

Harris Lithographing Co., Toronto.

STEAM PIPE and BOILER COVER-
INGS, asbestos

*Eureka Mineral Wool & Asbestos
Co., Toronto.

STEAM SHOVELS

*M. Beatty & Sons, Ltd., Welland,
Ont.

STEAM SPECIALTIES

*C. A. Dunham Co., Ltd., Toronto.

*Darling Bros., Ltd., Montreal.

*Sheldons, Ltd., Galt.

STEAM TRAPS

*C. A. Dunham Co., Ltd., Toronto.

*Canadian Morehead Manufactur-
ing Co., Limited, Woodstock.

STEEL

*Nova Scotia Steel & Coal Co.,
Ltd., New Glasgow, N.S.

*Burlington Steel Co., Ltd., Hamil-
ton, Ont.

STEEL BILLETS AND BLOOMS
*The Steel Company of Canada,
Limited, Hamilton.

STEEL BUILDINGS

*The Canadian Bridge Co., Ltd.,
Walkerville, Ont.

*Dominion Bridge Co., Ltd., Mont-
real.

*McGregor & McIntyre, Ltd., To-
ronto.

*Mackinnon, Holmes & Co., Ltd.,
Sherbrooke, P.Q.

*The Pedlar People Limited,
Oshawa.

*Trussed Concrete Steel Co. of
Canada, Limited, Walkerville, Ont.

STEEL CABINETS

J. & J. Taylor, Ltd., Toronto.

STEEL CASTINGS

*Canadian Steel Foundries, Ltd.,
Montreal, Que.

*Dominion Steel Foundry Co., Ltd.,
Hamilton.

STEEL FILING EQUIPMENT

*Office Specialty Mfg. Co., Ltd.,
Newmarket, Ont.

STEEL PLATE WORK

*Mackinnon, Holmes & Co., Ltd.,
Sherbrooke, P.Q.

*Toronto Iron Works, Ltd., Toronto.

STEEL RODS

*The Steel Co. of Canada, Ltd.,
Hamilton.

STEEL SASH

*Dennis Wire & Iron Works Co.,
London.

*Trussed Concrete Steel Co. of
Canada, Limited, Walkerville, Ont.

STEEL SHELVEING

*Dennis Wire & Iron Works Co.,
London.

STEEL WIRE RODS

*The Steel Company of Canada,
Limited, Hamilton.

STELLITE

*Deloro Smelting & Refining Co.,
Ltd., Deloro and Toronto.

STENCILS, brass

Pritchard-Andrews Co. of Ottawa,
Ltd., Ottawa, Ont.

STEREOTYPING

Central Press Agency, Toronto

STOKERS

*The Jones Underfeed Stoker Co.,
Ltd., Toronto.

STOOLS AND BENCHES, piano and
organ

*Otterville Mfg. Co., Ltd., Otter-
ville, Ont.

STOOLS, steel factory

*Steel Trough and Machine Co., Ltd.,
Tweed, Ont.

STONE

The Hagersville Contracting Co.,
Hagersville, Ont.

STONEWARE

*Jas. W. Foley & Co., St. John, N.B.

STORAGE BATTERIES

*Canadian General Electric Com-
pany, Ltd., Toronto.

STORE FITTINGS

The Canadian Office & School
Furniture Co., Ltd., Preston, Ont.

STOVES

Smith Foundry Co., Ltd., Frederic-
ton, N.B.

Tudhope-Anderson Co., Limited,
Orillia, Ont.

Bedford Stove Co., Bedford, Que.

STOVE LININGS

Standard Clay Products, Ltd., St.
Johns, Que.

STOVES AND RANGES

Bedford Stove Co., Bedford, Que.

Lee Mfg. Co., Ltd., Pembroke, Ont.

The Jas. Smart Mfg. Co., Ltd.,
Brockville, Ont.

McClary Mfg. Co., London, Ont.

STREET LIGHTING FIXTURES
*Crouse-Hinds Co., Ltd., Toronto.

STRETCHERS, lace curtain
*Otterville Mfg. Co., Ltd., Otter-
ville, Ont.

STRUCTURAL STEEL

*Canadian Allis-Chalmers, Limited,
Toronto.

*Dominion Bridge Co., Montreal.

*Hamilton Bridge Works Co., Ltd.,
Hamilton.

*Manitoba Bridge & Iron Works,
Ltd., Winnipeg.

*McGregor & McIntyre, Ltd., To-
ronto.

*McKinnon Holmes & Co., Sher-
brooke, P.Q.

*The Canadian Bridge Co., Ltd.,
Walkerville, Ont.

SUIT CASES

J. Eveleigh & Co., Ltd., Montreal.

The M. Langmuir Mfg. Co. of To-
ronto, Ltd., Toronto.

SUPPLY DEALERS

*The Foundation Co., Limited,
Montreal.

SURFACES

*Canada Machinery Corporation,
Limited, Galt, Ont.

*P. B. Yates Machine Co., Ltd.,
Hamilton, Ont.

SWITCHBOARDS

*Canadian General Electric Com-
pany, Ltd., Toronto.

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SWITCHES

*Crouse-Hinds Co., Ltd., Toronto.

SWITCHES, railway

Canadian Ramapo Iron Works, Ltd.,
Niagara Falls, Ont.

SWITCHES AND FROGS

*Canadian Steel Foundries, Ltd.,
Montreal, Que.

SWITCH STANDS

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Niagara Falls, Ont.

TABLE COVERS, chenille

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*Chicago Bridge & Iron Works,
Bridgeburg, Ont.

Goold-Shapley-Muir Co., Ltd.,
Brantford, Ont.

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brooke, P.Q.

*Ontario Wind Engine & Pump
Co., Ltd., Toronto.

*The Goldie & McCulloch Co.,
Ltd., Galt.

*The Waterous Engine Works Co.,
Ltd., Brantford.

TANKS, steel storage

*Mackinnon, Holmes & Co., Ltd.,
Sherbrooke, P.Q.

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Tweed, Ont.

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TAPS

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TAPES, measuring

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TOOLS, sheet metal workers'
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*Canadian Link Belt Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*The Watrous Engine Works Co., Ltd., Brantford.

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*Northern Crane Works, Limited, Walkerville.

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TRUCKS, motor
*National Steel Car Co., Limited, Hamilton.

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TRUNKS
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J. Eveleigh & Co., Ltd., Montreal.
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.

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Canadian Seamless Wire Co., Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.

TUBING, Fibre
*Beveridge Paper Co., Limited, Montreal.

TUBING, gold and silver
Canadian Seamless Wire Co., Toronto.

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*Northern Crane Works, Limited, Walkerville.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

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*Brown Corporation, La Tuque, Que.

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*Shurly & Derrett, Ltd., Toronto.

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TWINES, cotton
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*Pratt and Whitney Co., of Canada, Dundas, Ont.
*The Wilt Twist Drill Co., Ltd., Walkerville, Ont.

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Kingston Hosiery Co., Ltd., Kingston, Ont.

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*Otterville Mfg. Co., Ltd., Otterville, Ont.

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*Canadian Hart Wheels, Ltd., Hamilton, Ont.

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*Canadian Hart Wheels, Ltd., Hamilton, Ont.

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*Beveridge Paper Co., Limited, Montreal.

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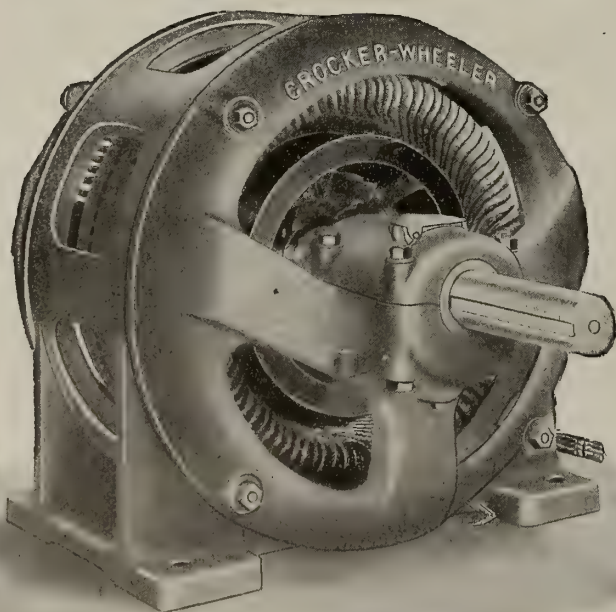
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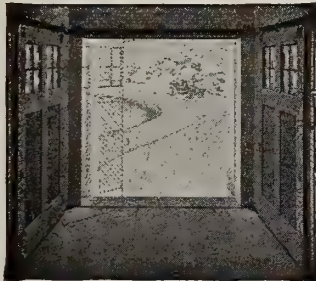


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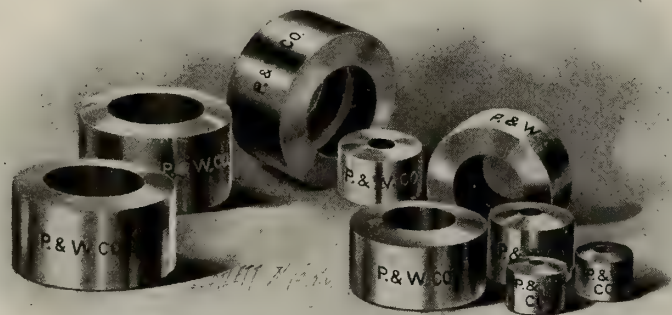
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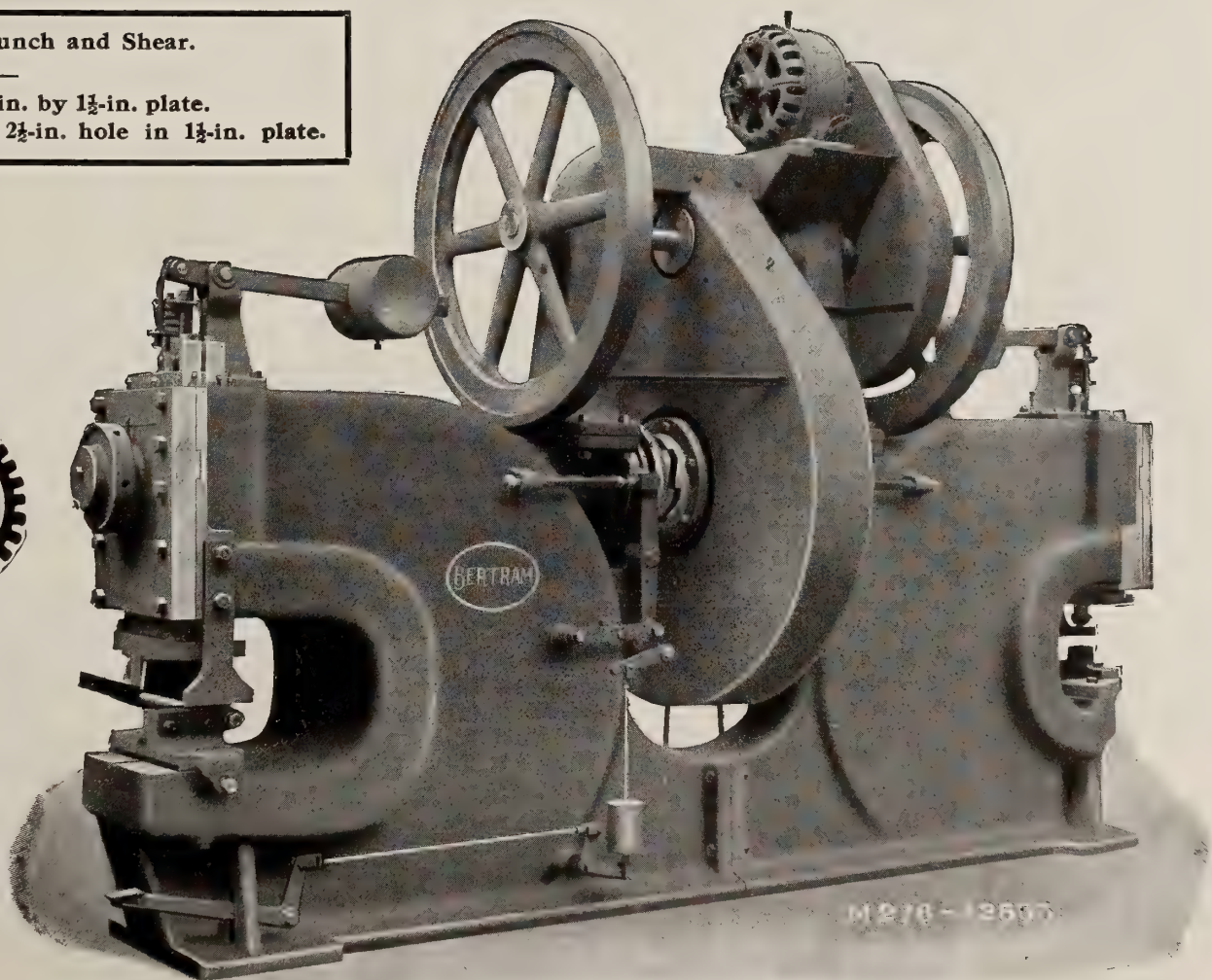
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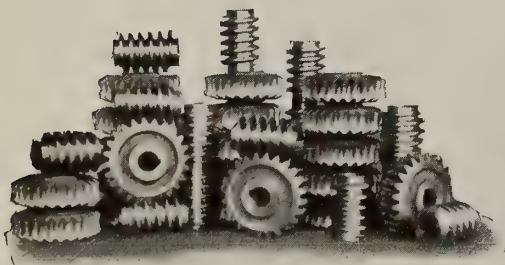
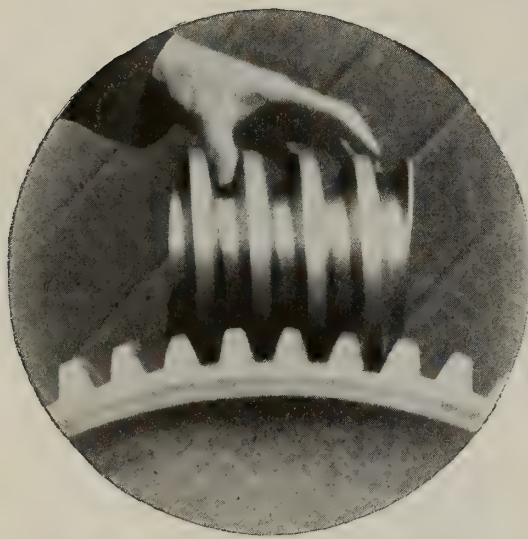
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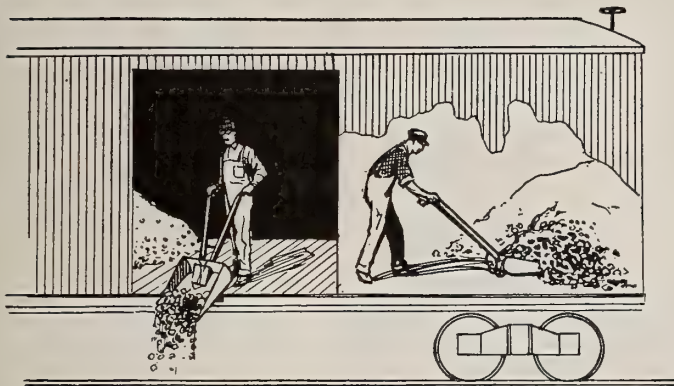
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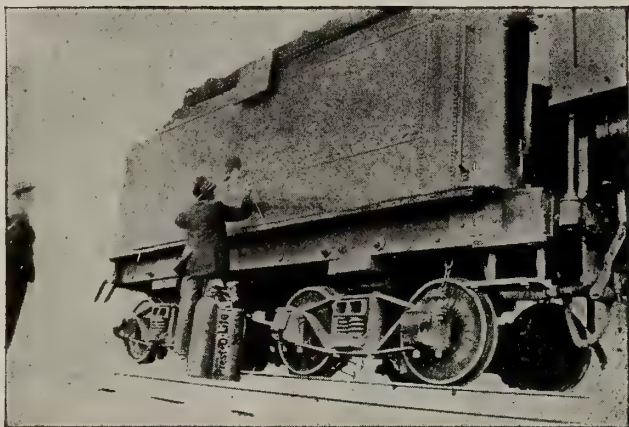
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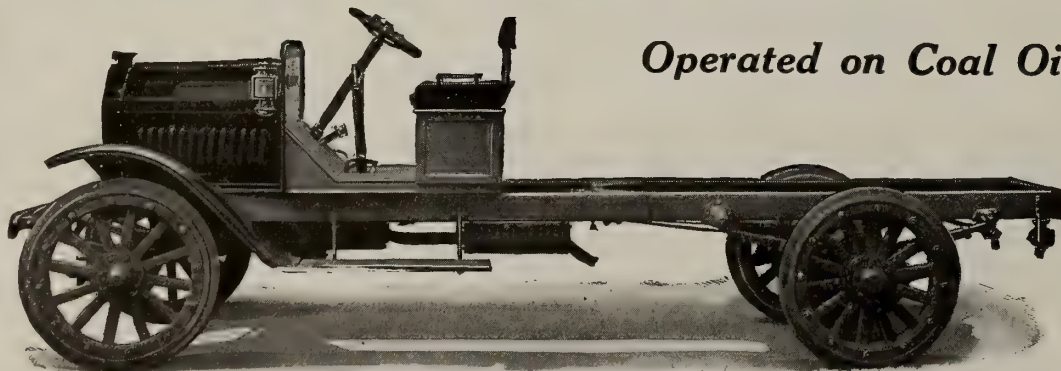
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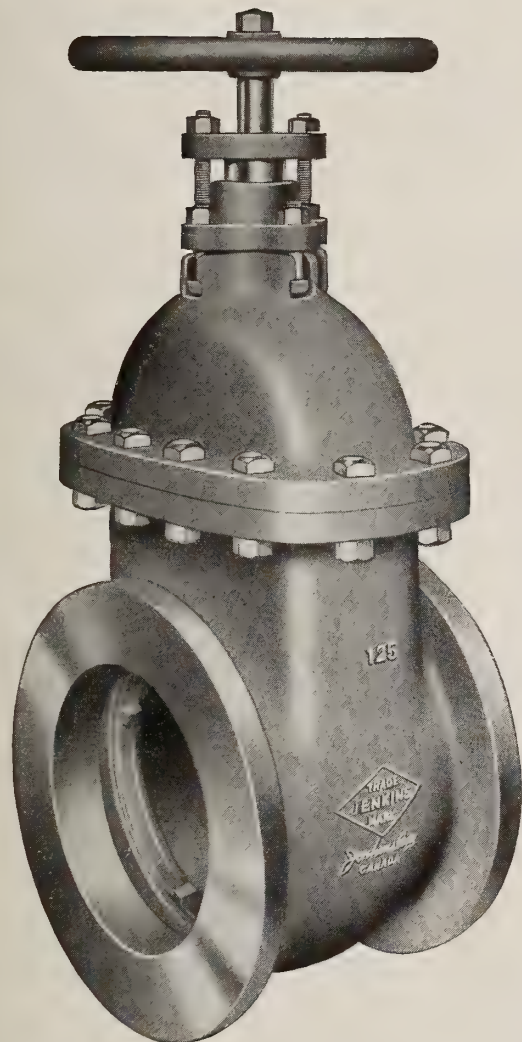


FIG. 402, TYPE "K," IRON BODY
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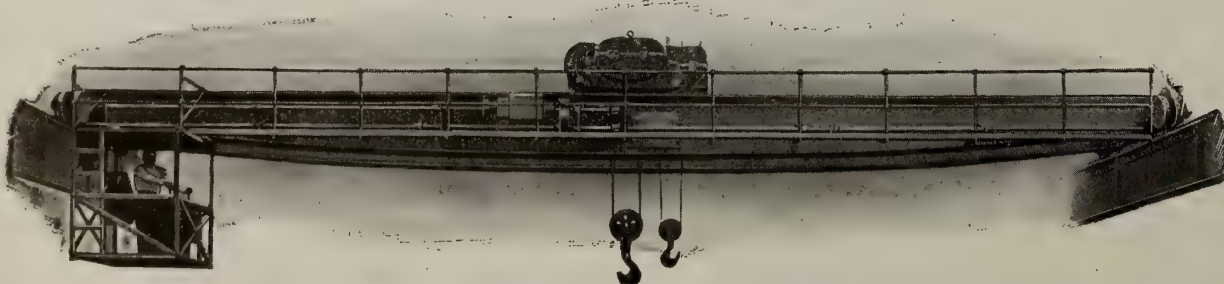
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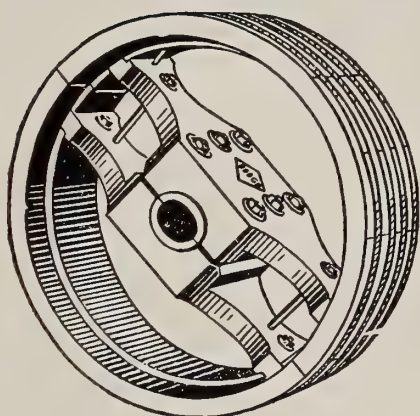
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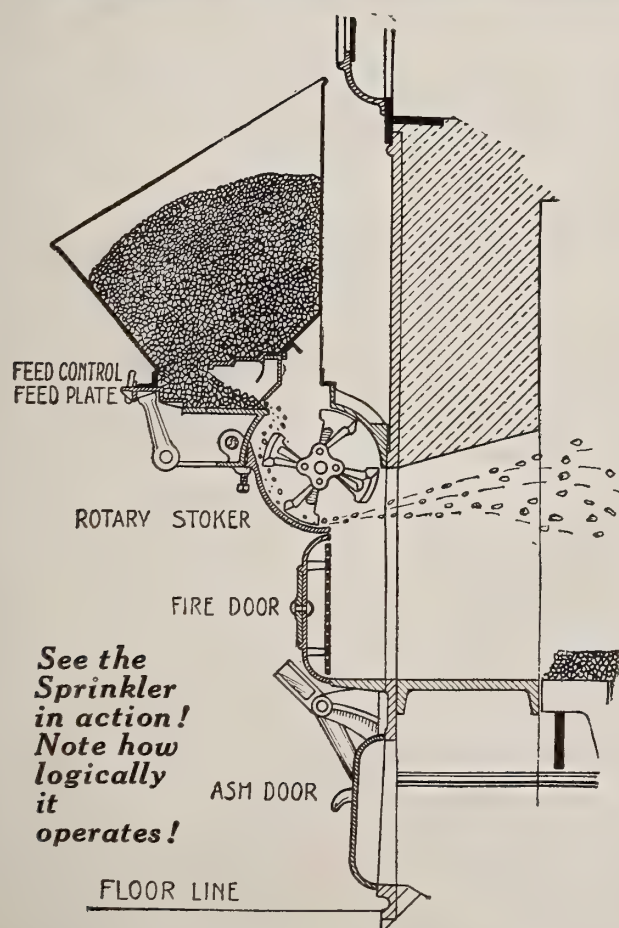
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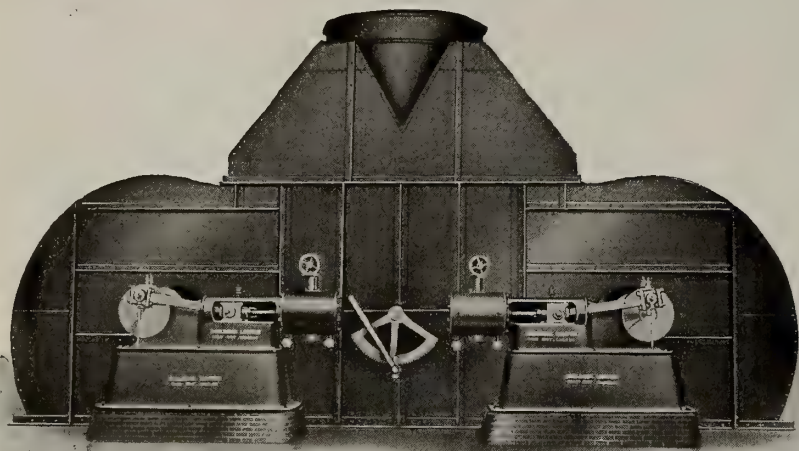
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MASSEY - HARRIS

High-Grade Farm Implements

Grain Binders, Reapers, Corn Harvesters, Mowers, Rakes, Side Delivery Rakes, Tedders, Hay Loaders, Cultivators, Seeders, Hoe Drills, Shoe Drills, Disc Drills, Fertilizer Drills, Fertilizer Sowers, Disc Harrows, Drag Harrows, Harrow Carts, Feed Cutters, Pulpers, Ensilage Cutters, Manure Spreaders, Cream Separators, Plows, Scufflers, Land Rollers, Packers, Wagons, Sleighs, Dump Carts, Gasoline Engines, Grain Grinders, Saw Outfits, Sprayers, Tractors, etc.

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Ormsby



"ORMSBY Best of Them All"

TAYLOR-FORBES COMPANY, LIMITED

Guelph, May 30, 1918

"We have two Ormsby SWARTWOUT Ventilators in use in our Forge Department, and we have found them entirely satisfactory in every way—in fact, we have probably fifty (50) Ventilators throughout our Plant and the Ormsby is the best of them all."

Yours truly,
JNO. M. TAYLOR,
Pres. and Gen. Manager

N.B.—This company has since bought 3 more.

Fresh Air Insures Production

Because fresh air *costs* nothing, don't think it is worth nothing. For lots of fresh air means production maintained and profits insured.

By installing Ormsby "Swartwout" Ventilators you apply the free power of the passing breeze to give a constant flow of fresh air.

You keep workers healthily active—there is no "dead," used air to make them sluggish. Production sheets are proof of

the constantly refreshed and revitalized atmosphere made possible by these modern, up-to-date ventilators.

Ormsby "Swartwout" Ventilators cost nothing beyond the purchase price. They are self-cleaning, wind-operated, run on ball-bearings, storm-proof. They quickly pay for themselves no matter on what shop they are installed.



If you're interested in improving working conditions in your plant—and increasing production—write for "The Gospel of Fresh Air"—a 24-page handbook (now in its 4th edition) full of live suggestions, data, diagrams, etc. A copy will be gladly mailed on request.

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A. B. ORMSBY CO., LIMITED

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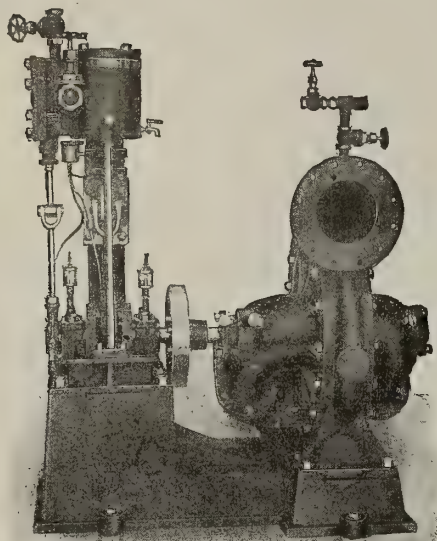
Associated with the Metal Shingle & Siding Co., Limited

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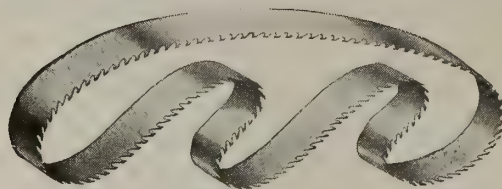
High-Class PUMPS for Every Service

Steam and Power Vertical and Horizontal



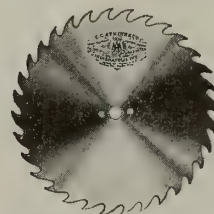
THE SMART-TURNER MACHINE CO.,
LIMITED
HAMILTON - - - CANADA

ATKINS "Sterling Quality" Saws



We make a "Perfect Saw for Every Purpose," from the smallest Coping to the large Band and Circular Saws.

Mill Owners, Industrial Plants, Woodworkers, Shipbuilders, Machinists and Farmers, it will pay you to buy Atkins Saws and Tools.



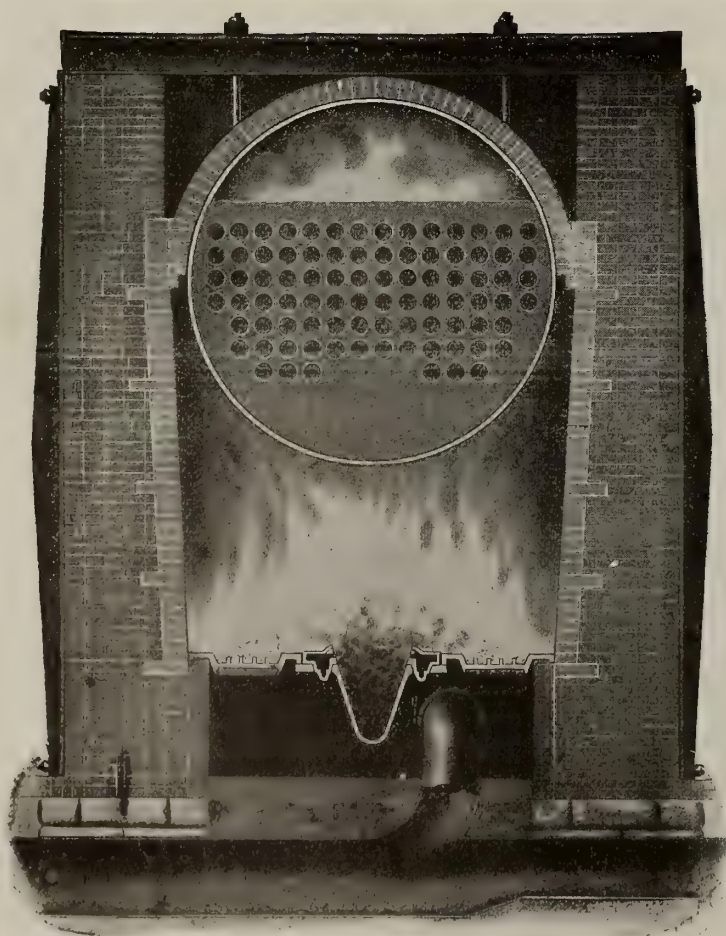
Time is money, and labor is scarce, therefore it will be to your advantage to use the most effective Saws and Tools—Atkins.

WRITE FOR OUR BIG CATALOG

E. C. ATKINS & COMPANY

Established 1857
Factory, Hamilton, Ont.

Atkins Always Ahead
Branch, Vancouver, B.C.



Save 15%

in coal while at the same time increasing the steaming capacity of your boilers. That's what you can do by installing the

Jones Underfeed Stoker

And this holds good on any grade of Bituminous Coal from Dust to Run of Mine.

Don't regard this as a mere claim—look into it. Jones Underfeed Stokers are saving 15% on fuel costs in thousands of plants—why not yours?

Write us for the proof.

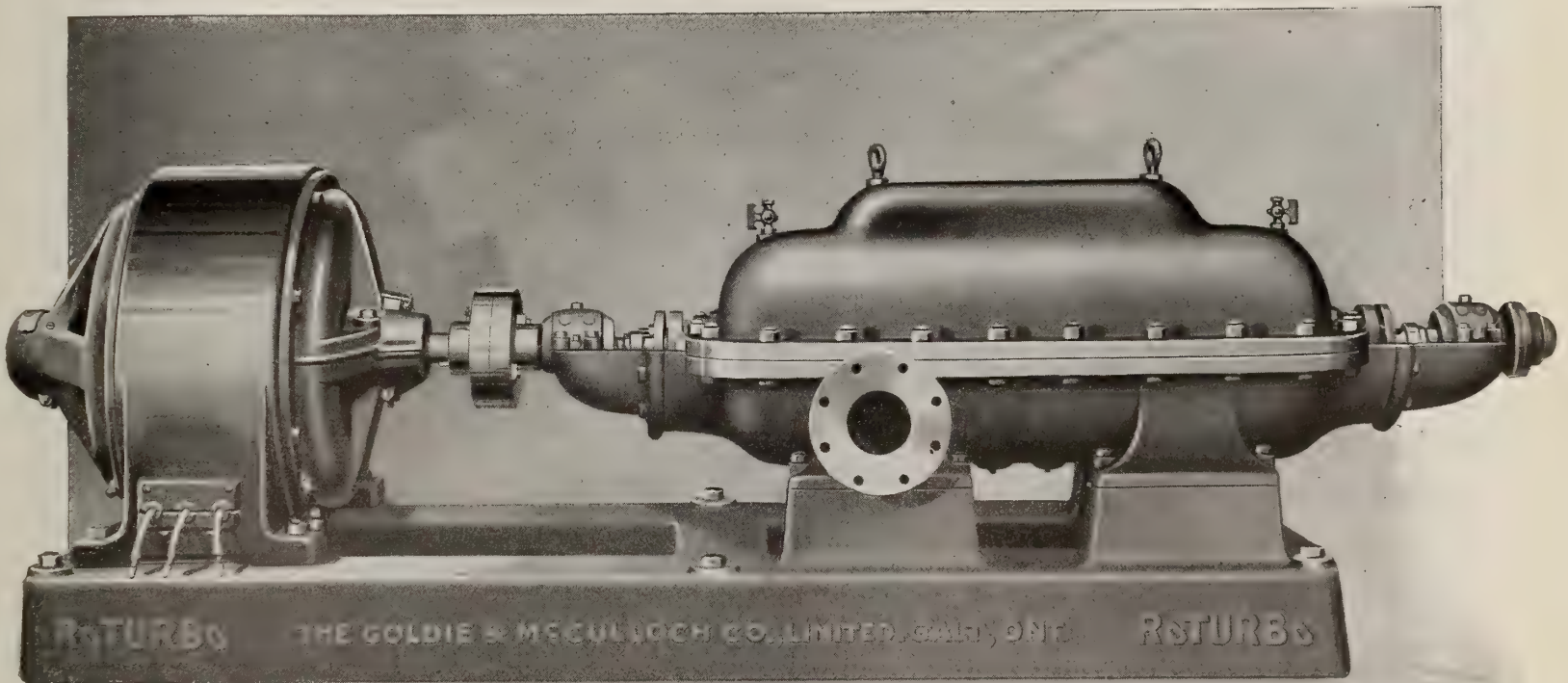
Jones Underfeed Stoker Co., Ltd.

37-41 Britain Street, Toronto

RoTURBo PUMPS

ARE SELF-REGULATING

And bear in mind that in addition to this self-regulating feature the original high efficiency of **RoTURBo** Pumps remains practically constant throughout a wide range of duty.



Motor Driven Type B4. Eight Stage REES **RoTURBo**
Patent Pressure Chamber Pump

A high pump efficiency rating amounts to very little unless it remains constant over a wide variation of pressure heads. **RoTURBo** design meets these requirements. Its self-regulating features also insure your prime mover against damage by overloading.

The **RoTURBo** will meet your pumping problems with greater economy and with higher efficiency.

We are glad to announce that we have secured the sole manufacturing rights for CANADA of the REES **RoTURBo** PRODUCTS and shall be pleased to supply complete information on request.

THE GOLDIE & McCULLOCH CO., Limited

Head Office and Works: GALT, ONTARIO, CANADA

TORONTO OFFICE:
Suite 1101-2,
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WESTERN BRANCH:
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QUEBEC AGENTS:
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Montreal, Que.

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Dunlop **"Gibraltar** **RedSpecial"**

Power—Speed—Service

ON one of the largest main drives in Canada, "Gibraltar RedSpecial" reigns supreme.

It was selected on its record of past performances because the duties were exceptionally exacting.

Only such a high-power belt as "Gibraltar RedSpecial" could meet the demands in a case like this.

Used on thousands of other drives, too.

The Dunlop Guarantee

If you have a difficult drive anywhere in your factory drop a line to our Head Office, or to our nearest branch, and we will send a man experienced in belt engineering to consider your requirements. If it is an instance where "Gibraltar" Belting may be suitably employed we will recommend its use; and we will stand behind our recommendation with the fullest guarantee ever issued by a firm producing rubber products.

"The Original Red Rubber Belt."

Dunlop Tire & Rubber Goods Co., Limited

Head Office and Factories: TORONTO

Branches in Leading Cities.

Makers of Tires for all Purposes, Mechanical Rubber Products of all kinds, and General Rubber Specialties.

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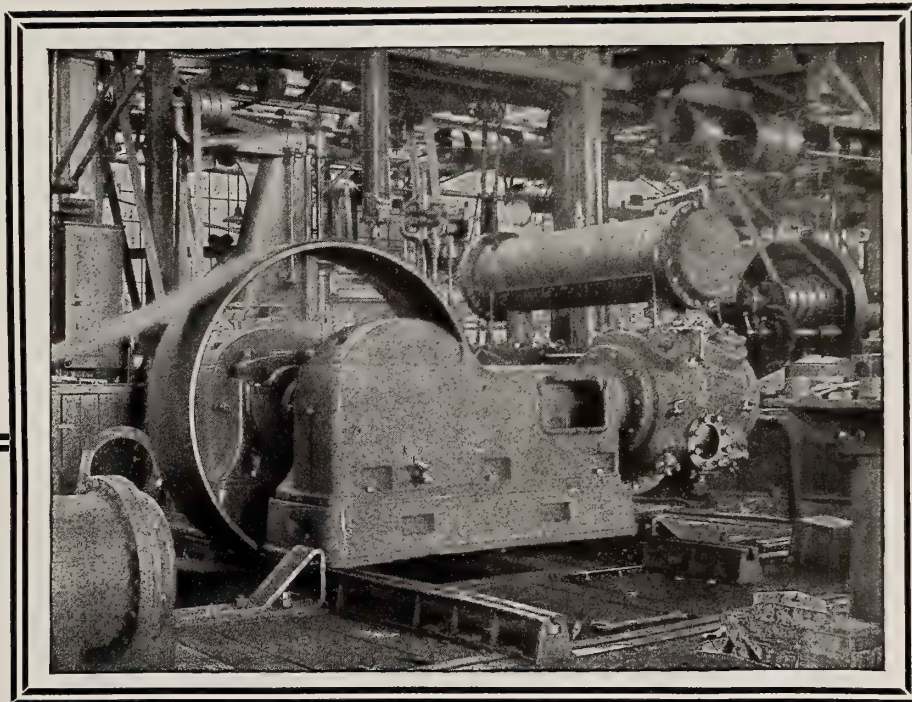

HONOR ROLL OF BELTING



The Circo Page



UNDER TEST



This is an absolutely untouched photograph of one of our "PLB-2" air compressors on its test run. Note the steadiness on the temporary foundation. Bolts and other details are as clear on the compressor as the details of the shop background—and this a half-minute exposure with the compressor running at full speed.

EVERY COMPRESSOR IS THOROUGHLY TESTED

Canadian Ingersoll-Rand Co., Limited

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BRANCHES :

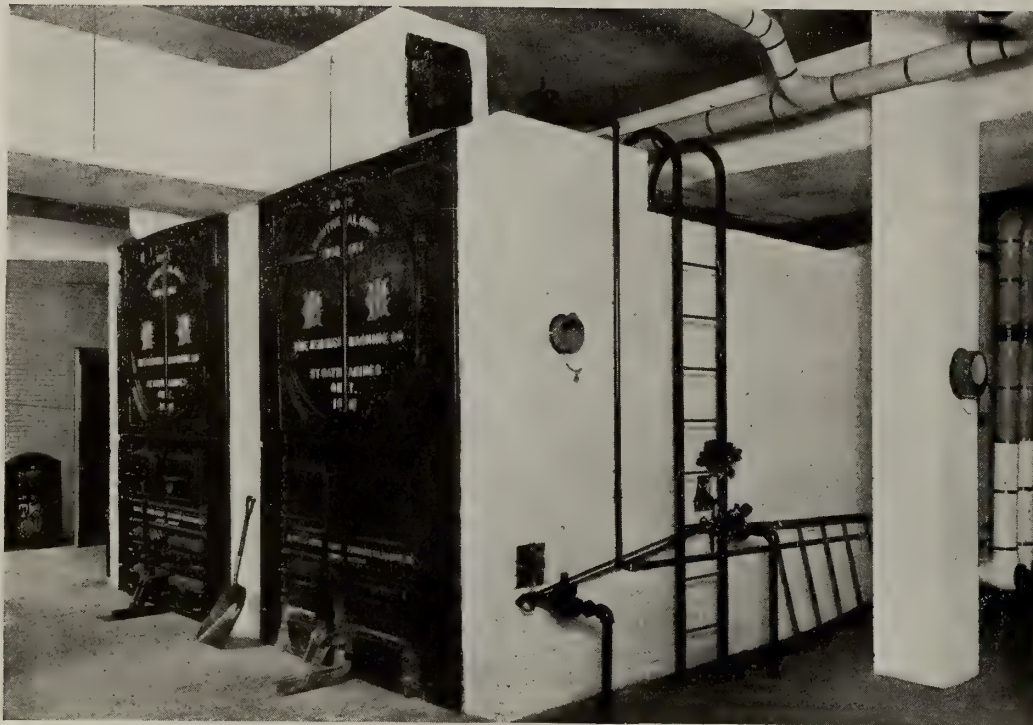
Sydney, N.S.
Sherbrooke, Que.
Montreal, Que.
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BRANCHES :

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Cut shows boilers built by us for the
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**Horizontal
Tubular
Boilers**
for every purpose

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Engineering and Machine Works of Canada LIMITED

Formerly
St. Catharines Works of
The Jenckes Machine Co., Limited

HEAD OFFICE AND WORKS: ST. CATHARINES, ONT.

GARLOCK



PACKINGS



Style No. 777

ARE made in over two hundred styles and combinations to meet every known requirement. We will assume entire responsibility in selecting the proper styles and combinations of our packings to work successfully and economically under any stated condition; and if goods are not wholly satisfactory to purchaser, we will refund promptly the cost of them. A card will bring our catalog, which fully describes our various styles of packings.



Style No. 150

The GARLOCK PACKING CO., Hamilton, Ont.

BRANCHES	{	Montreal, Québec	-	409 Shaughnessy Building
		Toronto, Ontario	-	404 Continental Life Building
		Winnipeg, Manitoba	-	Galt Building

HYDRAULIC and POWER PRESSES PUMPS and ACCUMULATORS

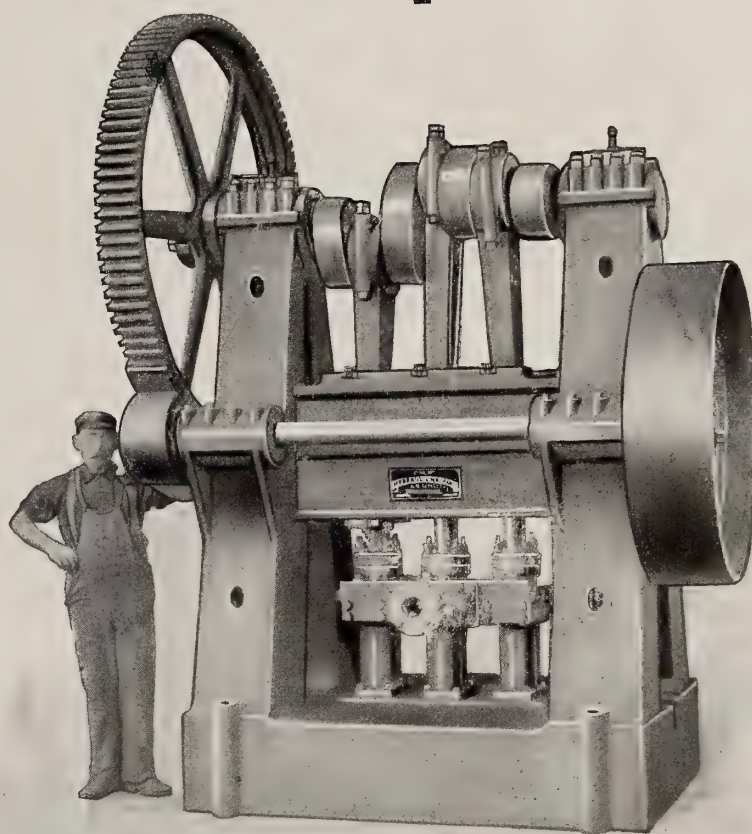
PIPING, FITTING AND VALVES

BUILT TO MEET SPECIAL
REQUIREMENTS OF
MANUFACTURERS OF

PULP AND PAPER
LEATHER BELTING
PACKING HOUSES
VENEER
FORGINGS
MACHINE SHOPS
TANNERIES
POWDER
ETC., ETC.

Also—

SPECIAL SHELL
PRESSES AND
EQUIPMENTS



STANDARD HYDRAULIC PRESSURE PUMP

If you, as a manufacturer of products requiring pressing, or of some product in which pressing is an important factor, have need of a better pressing or special equipment than you have heretofore been unable to secure, write us fully as to your requirements.

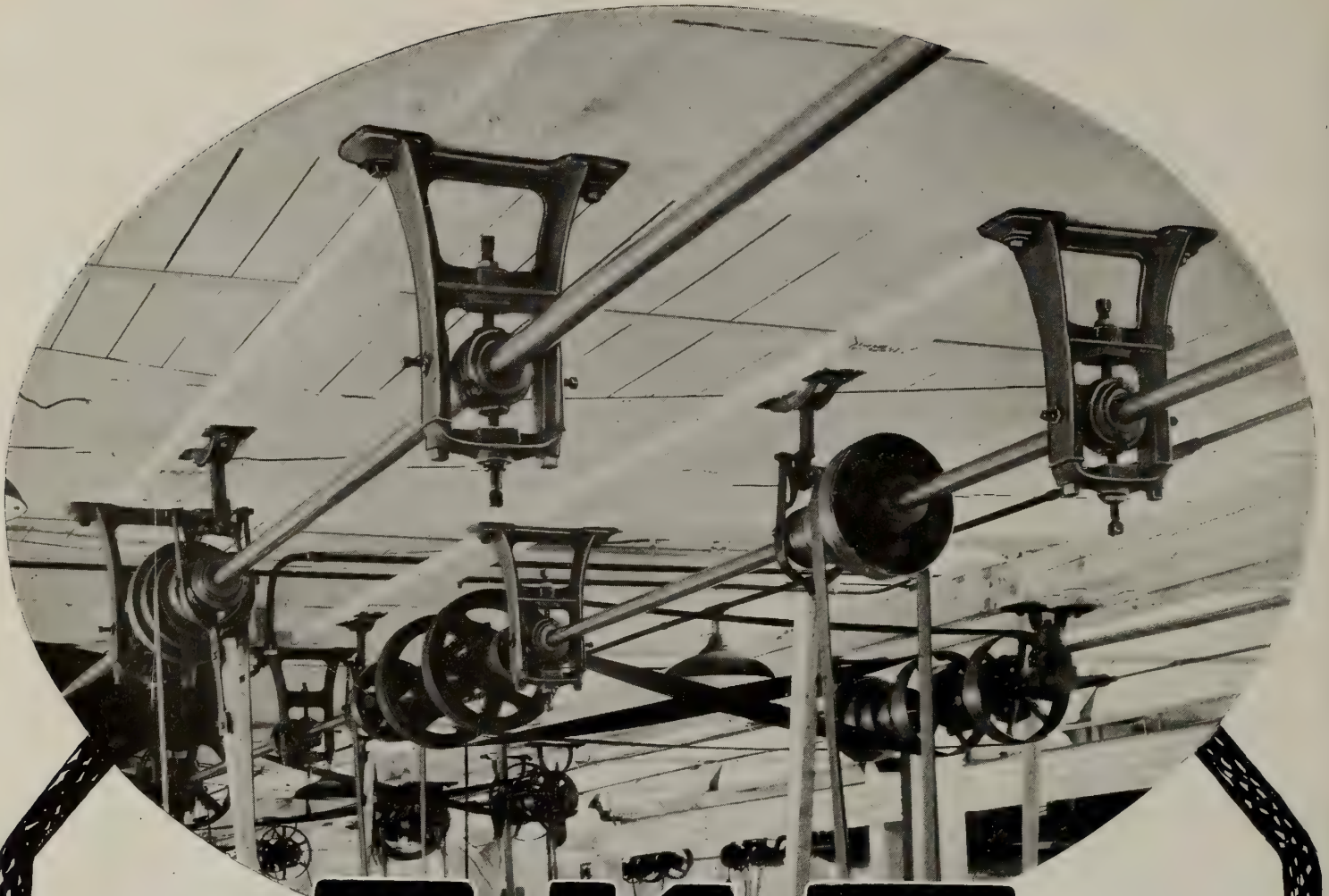
New Catalog "B" upon request.

The Hydraulic Machinery Co.

LIMITED

MONTREAL

CANADA



S.K.F.

BALL BEARING HANGERS SIX MONTHS ON ONE OILING

To oil hangers but twice a year is a persuasive argument---a vast amount of oil, trouble and labor are certainly saved.

But do not overlook other savings. Think what the S.K.F. oil-tight housing means---no oil-soaked belts, no oily floors, no goods spoiled in process by oil, reduced fire risk. Think of the safety to your employees, who no longer have to climb among moving belts, shafts and pulleys. Think of the greatest saving of all, bearing friction reduced 60% to 80%---a saving of 20% to 35% on total power.

Let us give you the service record of S.K.F. made in scores of Canadian plants. Let us refer you to users near you. We would welcome the opportunity.

MADE BY THE

Canadian S.K.F. Co., Limited, Toronto, Ont.

Sole Canadian Agents for S.K.F. Transmission Bearings

The Canadian Fairbanks-Morse Co., Limited

"Canada's Departmental House for Mechanical Goods"

Halifax, St. John, Quebec, Montreal, Ottawa, Toronto, Hamilton, Windsor,
Winnipeg, Saskatoon, Calgary, Vancouver, Victoria.





HAND TRUCKS

MADE IN CANADA

WHEREVER an occasional use of a truck is required, a Fairbanks-Morse Hand Truck will prove satisfactory.

They are made in hundreds of styles for various needs.

Where trucking is a serious problem in any industry, we recommend the

Automatic Electric Storage Battery Trucks

These trucks will do the work of many men at much smaller cost. They are great labor savers, and should not be overlooked if your trucking problem is a big one.

JACKLIFT Elevating Trucks

MADE IN CANADA

The majority of trucking problems are satisfactorily solved by the use of the elevating truck and platform system of handling goods.

The Jacklift Trucks are highly recommended for this work and hundreds of manufacturers have shown their approval of them by their repeat orders.



The Canadian Fairbanks-Morse Company, Limited

"Canada's Departmental House for Mechanical Goods"

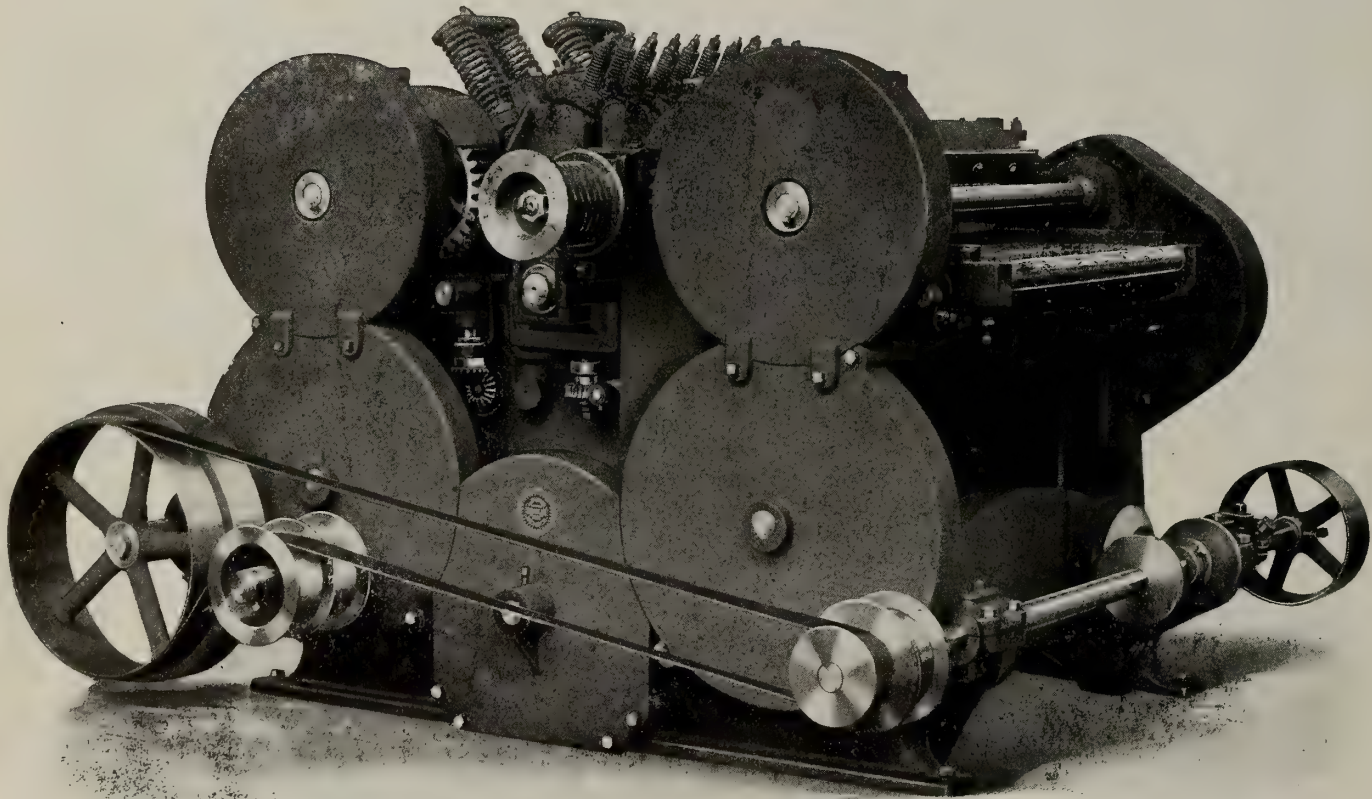
HALIFAX, ST. JOHN, QUEBEC, MONTREAL
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CALGARY, VANCOUVER
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GENERAL PURPOSE DOUBLE SURFACER NO. 177



The Solution for Your Surfacing Problems

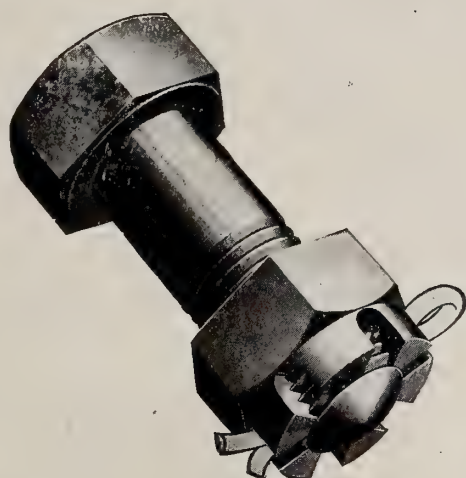
If your stock needs smoother surfaces—needs the extra touch that raises the grade and increases the profit—the Yates No. 177 is the solution. If your production needs whipping up—needs an extra and continuous push to increase the size of your lumber pile and your bank account—the Yates No. 177 is the solution.

The Yates No. 177 Double Surfacers is compact and durable. It is built 30" wide and will open 7". It will handle anything from veneer to timbers, and stand up day in and day out. Has extra-efficient heads, which may be ground and jointed in machine. Bed is raised and lowered by power. All controls convenient to operator. Feed rates up to 100 feet per minute.

A postal will bring you our new circular on this machine. It describes and illustrates the "177" in detail. Send for it to-day.

P. B. Yates Machine Co. Ltd.

**HAMILTON, ONT. CANADA
U. S. PLANT, BELOIT, WIS.**



CAP AND SET SCREWS

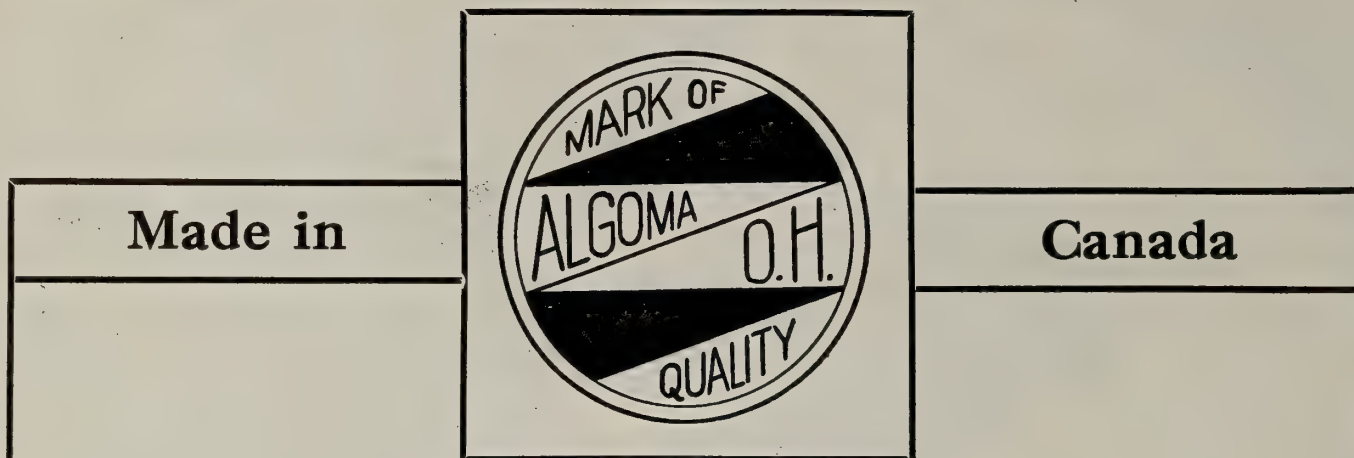
Plain and Castellated NUTS
IN STOCK

Standard sizes and threads.

Special screw machine work made to specifications from Iron, Steel and Brass Bars in sizes up to $2\frac{1}{4}$ and $10\frac{1}{2}$ " long.

Quotations on your samples or blueprints.

The National Acme Company
De Courcelles and G. T. R. Montreal, P. Q.



STEEL RAILS SPlice BARS STEEL TIE PLATES

Structural Shapes, Standard Merchant Bars,
Blooms, Billets, Concrete Reinforcing Bars

PIG IRON

BASIC and BESSEMER

Let Us Quote on Your Requirements

Algoma Steel Corporation Limited
SAULT STE. MARIE, ONTARIO



FOR UPHOLSTERY

Craftsman
Quality



Is
Better

If all furniture was upholstered in FIRST GRADE leather (that is to say the outside layer of the hide) then we would not say "Fabrikoid is better." But first grade leather is scarce and very expensive. And most leather covered furniture is only "leather splits," which is pulpy and porous, easily rubbed and torn.

Craftsman Quality Fabrikoid is tough, water and stain-proof. It has a handsome, grained surface that resists wear and at the same time is soft and pliable. It is used in the covering of high grade furniture, carriage, automobile, and car seats, and for all such purposes where appearance, durability and service is required.

In buying furniture you should specify "upholstered in Craftsman Quality Fabrikoid." You can offer such furniture to your customers with absolute confidence in the satisfaction and wear it will give.

Write us for Samples of Craftsman Quality Fabrikoid

DUPONT FABRIKOID COMPANY
Factory and Sales Office: NEW TORONTO, Ont.



Seven Times Around the World

Over 600 miles of Lead-covered Telephone Cable was the output of our plant for one year.

The single telephone wire in this cable amounted to nearly a billion feet or enough to encircle the earth at the Equator more than seven times.

The supremacy of the Northern Electric Company as the largest makers of bare and insulated wires and cables for all purposes has never been questioned.

Northern Electric Company

LIMITED

MONTREAL HALIFAX TORONTO WINNIPEG
REGINA CALGARY VANCOUVER



Unequalled manufacturing and shipping facilities insure prompt deliveries.



The Shipping Department is one of the largest and best equipped in Canada. It can accommodate twenty-two freight cars.



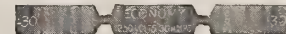
Where the load is jerky ~

such as on the circuit that provides power for this big battery of drills—the cost of fusing is an item that is carefully checked up on.

ECONOMY renewable FUSES

cut annual fuse maintenance costs 80%

Economy Fuses lead in accuracy. That is the chief reason why they are used by prominent munition plants, by the U. S. Navy and others who must consider absolute electrical safety above everything else when buying fuses. Any inexperienced hand can replace the link and renew the fuse in a jiffy. And that 80% saving is not to be ignored.



An inexpensive little "Drop Out" Renewal Link restores a blown Economy Fuse to its original efficiency.

Write for Catalog 40

Economy Fuse & Mfg. Co.
of Canada, Limited

Manufacturers in Canada of S & C High
Potential Fuses—to 150,000 Volts.

UNITY BUILDING, MONTREAL

YOUR BIT

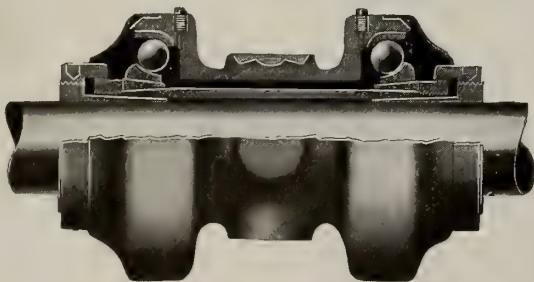
You have probably invested in Victory Bonds, and contributed to the Red Cross. Perhaps you are economizing in many ways also; but there is still another way to help—save power.



Chapman Double Ball Bearings

save 20 per cent. of power by eliminating friction. If you are wasting power in transmission, you are wasting coal—one of the articles the Government requests us to conserve.

It is not necessary to shut down your plant to install Chapman Bearings. They are interchangeable with self-oiling bearings of the same shaft size, and power is not the only thing they save.



Let Us Tell You More About Them

CHAPMAN DOUBLE BALL BEARING CO., Limited

337-351 Sorauren Avenue, Toronto
408 Shaughnessy Building, Montreal

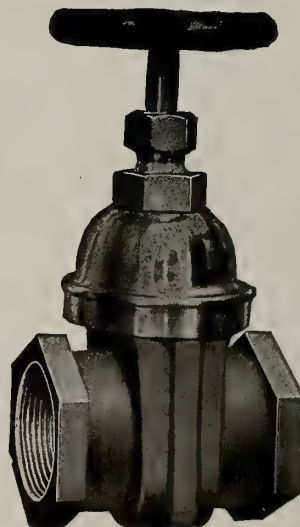
Transmission Ball Bearing Co., Inc.
1050 Military Road, Buffalo, N.Y.

MUELLER REDUCING AND REGULATING VALVES

The right kind of valve is one that is adapted to your particular service. Different services under different conditions necessitate different types of valves. Don't guess. Consult us. When **MUELLER** valves are installed under our supervision we fully warrant them to control the service for which they are recommended. We make valves for water, steam, gas, air, oil and ammonia.

H. Mueller Mfg. Co. Ltd.
SARNIA, CANADA

HERE IS A Brass Gate Valve



You will find it always made from High Grade Steam Metal and beautifully finished.

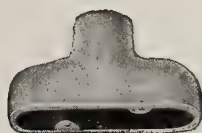
They are not made of one quality this year and another next. Always reliable and worth the price you pay.

The Kerr Engine Co., Limited
VALVE SPECIALISTS
WALKERVILLE - ONTARIO



Conduit Pipe Fittings

Made in Canada



TYPE A



TYPE B



TYPE F

In introducing to the trade C.G.E. Conduit Pipe Fittings, we desire to call particular attention to the following points, in connection with their manufacture: All C.G.E. Pipe Fittings are made of pure metal, carefully selected to ensure proper tapping and threading, well-japanned on the inside and electro-galvanized on the outside.

The cover openings are ground thoroughly flat and screw holes well centred.

All covers are fitted to castings before shipment, to avoid possible drilling error or extreme shrinkage of porcelain.

In general quality, high finish and uniformity of product, C.G.E. Fittings compare most favorably with any other make on the market.

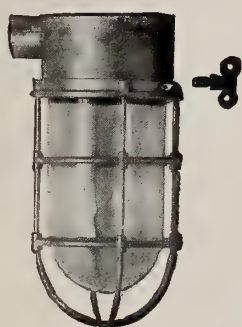
Every shipment is warranted to maintain this high standard—samples will gladly be forwarded free of charge, on request.

C.G.E. Fittings comprise all standard types.

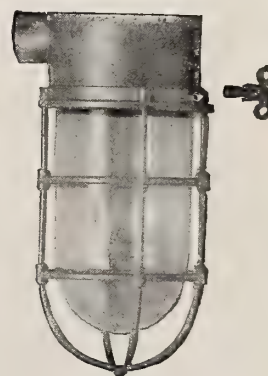
C.G.E. Fittings are approved by the National Board of Fire Underwriters and by the Hydro Electric Power Commission of Ontario.

AND THEY COST LESS MONEY.

Bulletin No. 618, describing these fittings, will be sent on request to our nearest office.



TYPE V
Vapour, Gas and
Dust Proof

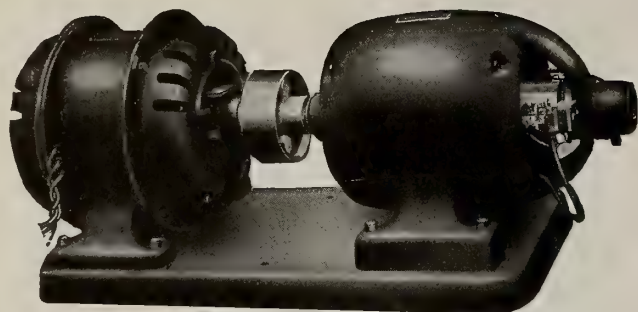


TYPE VH
Vapour, Gas and
Dust Proof

CANADIAN GENERAL ELECTRIC CO.

LIMITED

Head Office: Toronto. Sales Offices: Montreal, Quebec, Halifax, Sydney, Ottawa, Cobalt, South Porcupine, London, Winnipeg, Calgary, Edmonton, Nelson, Vancouver.



Motor Generator for Charging Batteries

Motor Generators and all Electrical Machinery

*Write for prices and send
your repairs to*

TORONTO AND HAMILTON ELECTRIC CO.
Limited

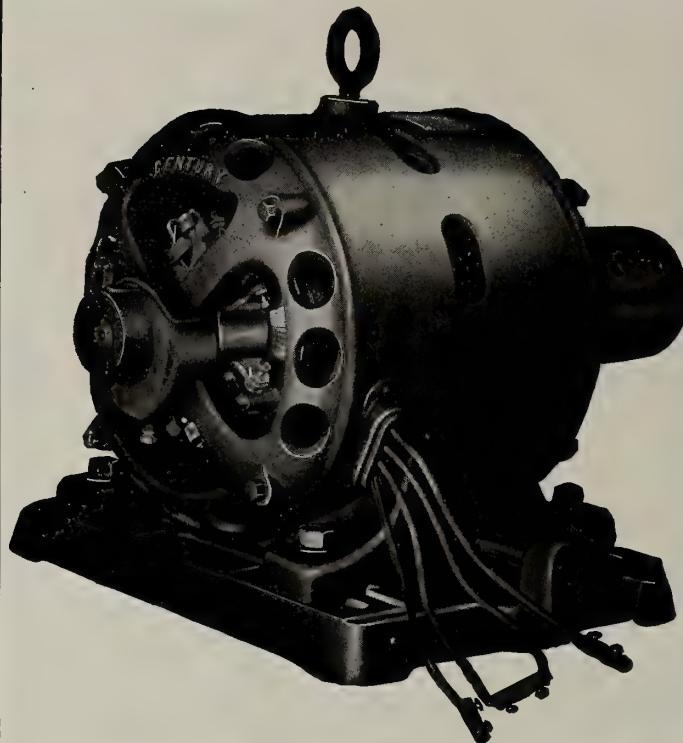
99-103 McNab St. North, Hamilton

Jones & Moore Electric Co.

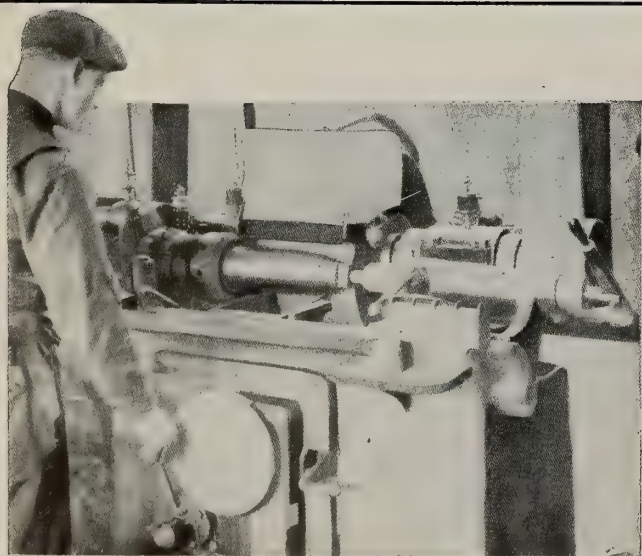
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294-300 Adelaide St. W.

Toronto



MANUFACTURERS OF DYNAMOS AND MOTORS
REPAIRS PROMPTLY PERFORMED



Canadian Hart Wheels

are used with great success in grinding

SHRAPNEL AND HIGH EXPLOSIVE SHELLS

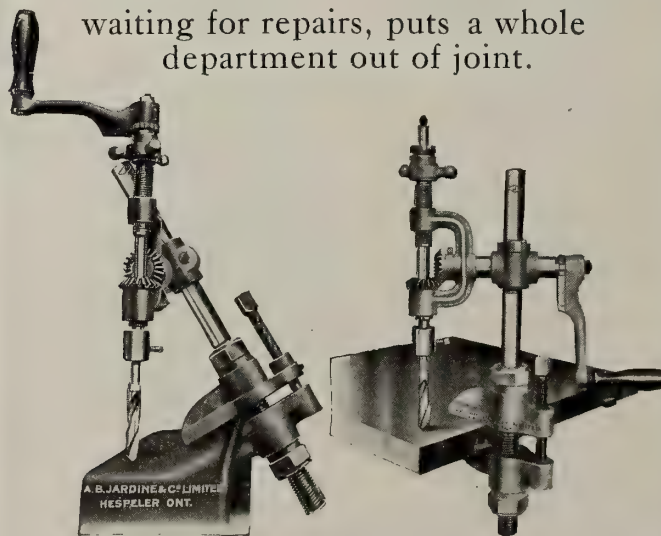
Canadian Hart Wheels cut faster and longer than any
other grinding wheels. Put your grinding problems up to us.

Canadian Hart Wheels, Limited

Manufacturers of Grinding Wheels and Machinery
Hamilton - Canada

A Machine Standing Idle

waiting for repairs, puts a whole
department out of joint.



Jardine Universal Ratchet Drill

Gets a hustle on the repair job.

Every factory should have one or more.

A. B. JARDINE & CO.

LIMITED

HESPELER, ONT.



Canadian Carbide

Made in Canada

SOLD THE WORLD OVER

Second to None in

QUALITY, GAS YIELD
AND PACKAGE.

Works:

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Shawinigan Falls
Que.

MANUFACTURED BY

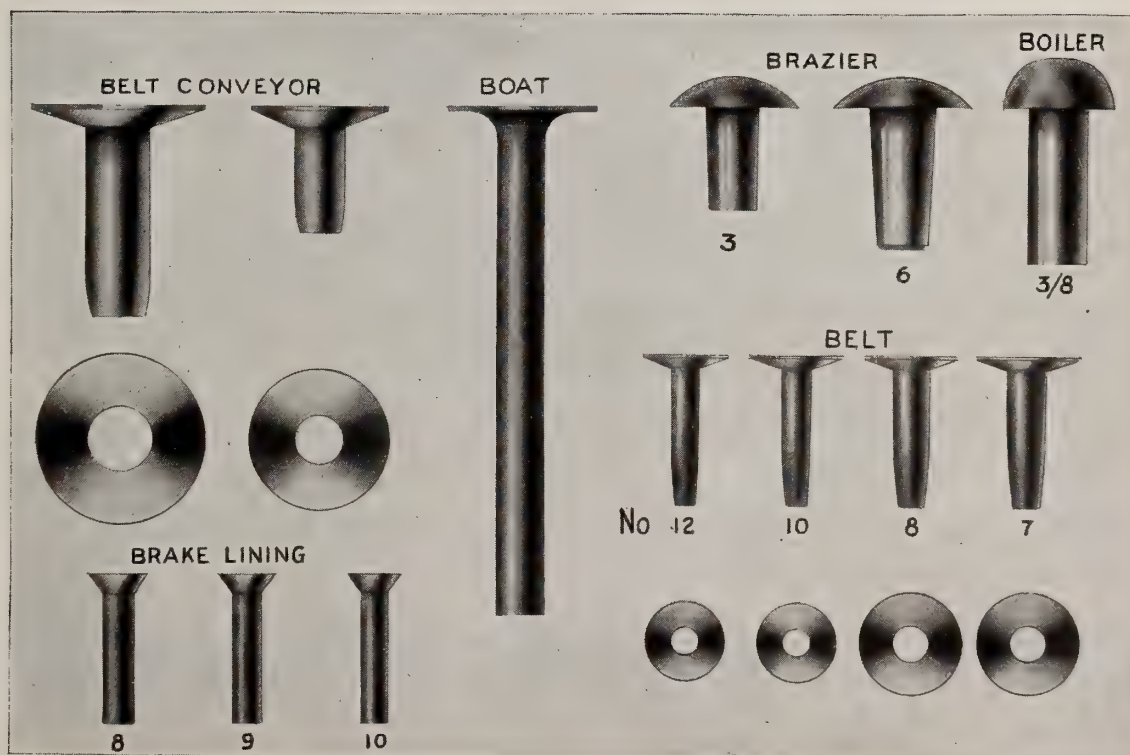
Canada Carbide Company, Limited

MONTREAL - CANADA

MACHINE SCREWS - STANDARD - COPPER RIVETS

BRASS
BRONZE
STEEL

ROUND
FLAT
FILLISTER
BINDING
BUTTON
WASHER
HEADS
for
IMMEDIATE
SHIPMENT.



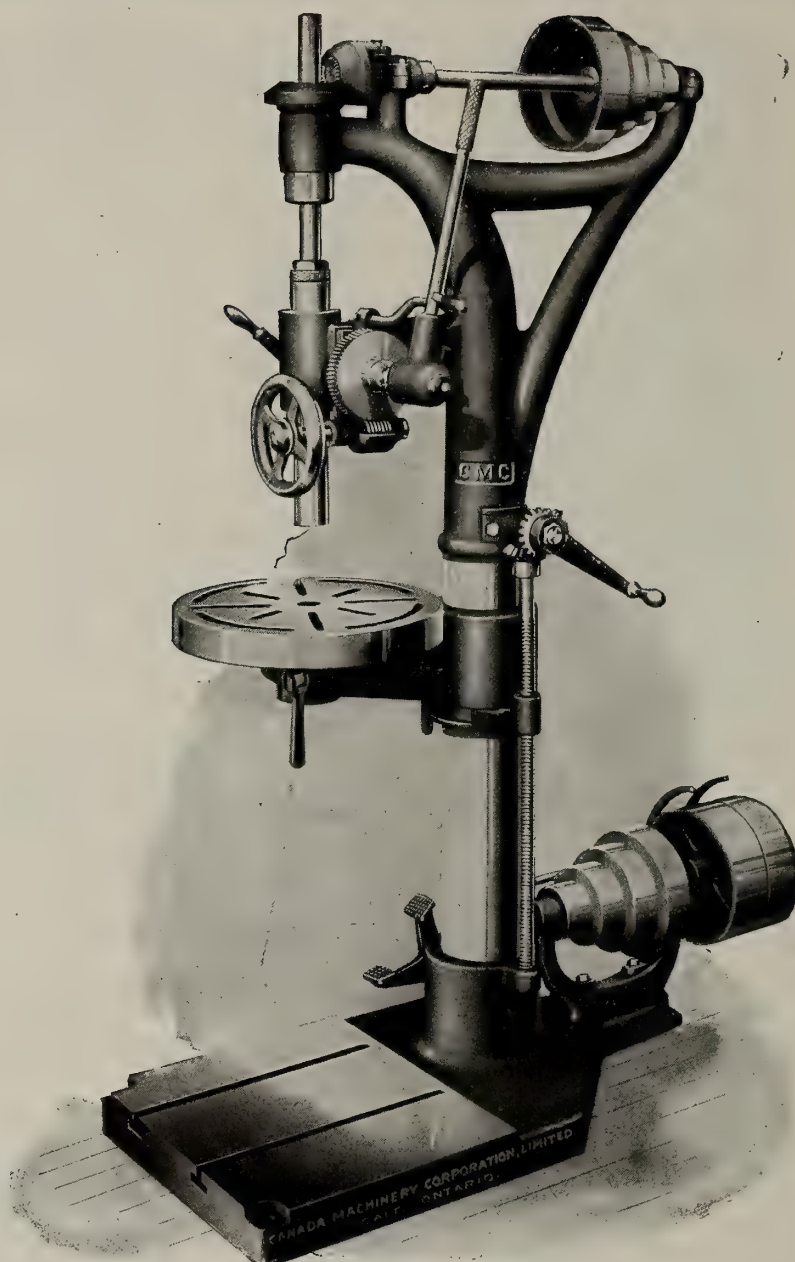
BELT
RIVETS
COPPER
NICKEL
SILVER
BRASS

BRAKE
LINING
BRAZIER
BOAT.

THE STOWELL SCREW CO., LIMITED
290 ST. PAUL ST. WEST, - - - - - MONTREAL



*20" Wheel and
Lever Feed
Drill*



This drill is built with that thoroughness of design and workmanship which characterizes all C. M. C. Machine Tools. We make a similar drill with back gears and power feed.

Write for Bulletin No. 4121 for full particulars.

We build a complete line of wood and iron working machine tools, which are sold direct or by all leading machinery dealers.

CANADA MACHINERY CORPORATION
LIMITED

GALT - ONTARIO

Toronto Office and Showrooms, Brock Ave. Subway



This Catalogue Starts With Long Odds In Its Favor

when it comes to selling the excellent line it advertises. Southam Printing is the force behind the convincing message its pages contain.

You also make a quality product—only quality printing can bring full returns from the money you spend on its publicity, and you cannot afford to send out a catalogue less attractive and lacking the selling power such attractiveness gives.

When you entrust us with your printing, you are doing what many of the most discriminating and successful advertisers of this continent have been doing for years—and you will receive the same satisfying product and efficient service as we are giving them.

We write and plan advertising matter and print it in whatever colors are necessary to make it most effective. Send us specifications of your proposition, write or telephone for our representative.

SOUTHAM PRESS LIMITED
TORONTO CANADA'S LEADING PRINTERS MONTREAL

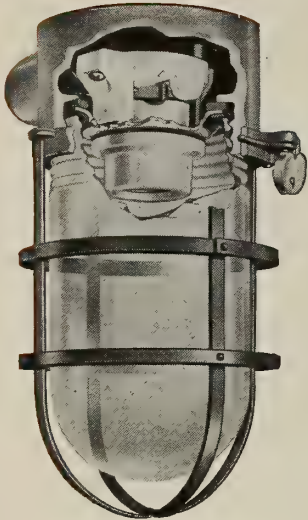
Steam-Tight Condulets

Electric Light Fittings

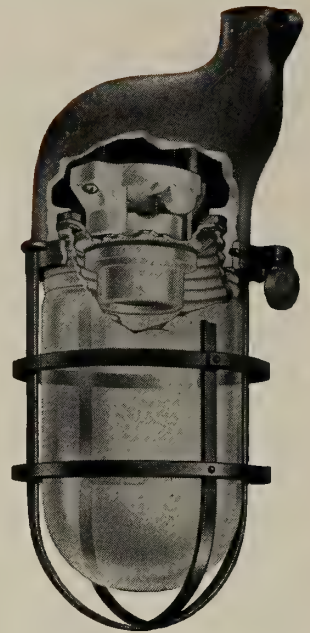
whose design, material and workmanship insure long and satisfactory service.

Furnished in either iron or brass for $\frac{1}{2}$, $\frac{3}{4}$ and 1-inch conduit.

Made in two sizes, to take 40 and 100-watt lamps respectively.



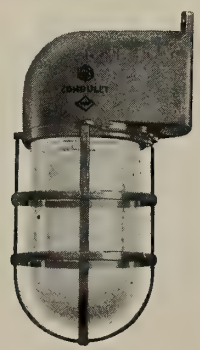
Condulet broken away to show parts.



Condulet broken away to show parts.



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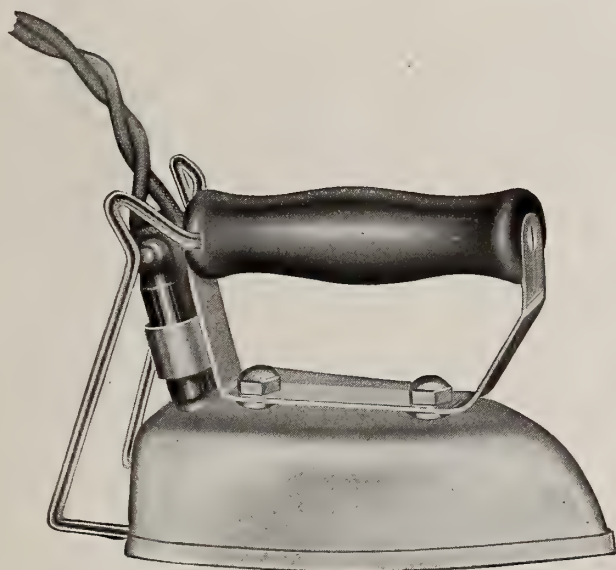
OF CANADA, LIMITED

Toronto, Ontario, Canada



Westinghouse

Electric Irons and Turnover Toasters



Two Profitable Leaders

The Iron is practically indestructible, has no delicate pieces. All heat is given off at the ironing surface. Radiation from top is prevented by a dead-air space. A heat storage plate stores the heat, making it stay hot longer.

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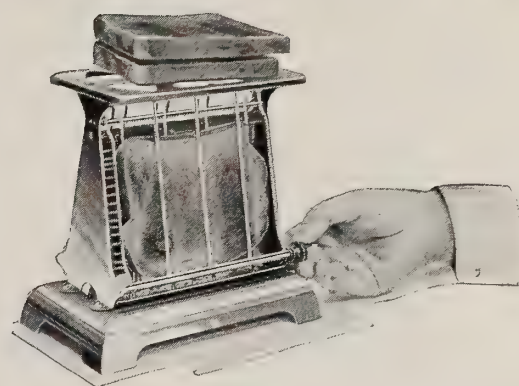
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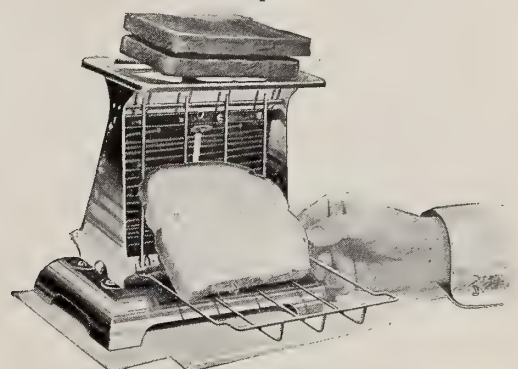
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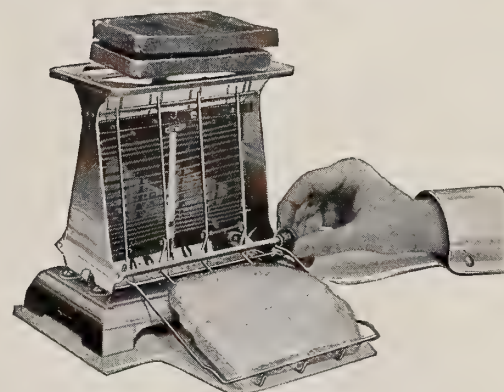
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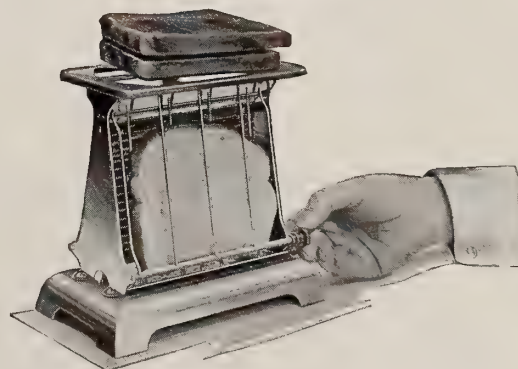
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Made in Canada

Make your roads Automobile-proof with Tarvia

*Merritton Road, St. Catharines, Ont.
Resurfaced with "Tarvia-X" and with
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Here is a thoroughfare which the automobiles formerly ground up and destroyed; now the automobiles harmlessly roll over it and smooth it down. Formerly the road was short-lived; now it is durable. Formerly the road was plain macadam; now it is Tarvia-macadam.

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The only maintenance required on roads of this type is an occasional treatment of "Tarvia B." The "Tarvia B" compensates for the wear, adds new resiliency to the pavement, and makes it dustless. No cheaper form of maintenance has ever been worked out for macadam roads of any type. Intelligently used, it insures a road indefinitely.

There is a long list of Canadian towns now which have been using Tarvia for many years with great success. Their experience is at your service.

Illustrated booklets will be sent to any interested person upon request. Address our nearest office.

Special Service Department

This company has a corps of trained engineers and chemists who have given years of study to modern road problems.

The advice of these men may be had for the asking by anyone interested.

If you will write to the nearest office regarding road problems and conditions in your vicinity, the matter will have prompt attention.

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INDUSTRIAL CANADA

ISSUED BY

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INCORPORATED.

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Inefficient Insurance Agents

IT is greatly to be regretted that, in many quarters, the business of the insurance agent has come to be regarded as the last resort of the unfit,—a haven of refuge for the business failure. If a man engaged in trading or manufacturing fails so badly as to prohibit his recommencing in the same line, he is too apt to consider that, with an agency for a couple of insurance companies, his friends will come to his assistance for the sole reason that it does not cost them anything to let him place their insurance. As a result, there are many men engaged in the insurance business who lack both knowledge and experience, the consequence being that their clients' interests are sometimes seriously endangered.

Not very long ago a firm of manufacturers sent all their policies to the C.M.A. Insurance Department with the request that they should be examined and a report made. The firm in question carried fire insurance on property divided into a number of items, but the policies were so hopelessly involved that it was almost impossible to tell the amount for which each item was insured. Although the first axiom of fire insurance is that policies covering the same property should read similarly, hardly

two of the policies examined were concurrent, and, if a fire had occurred while they were in that state, delay would have been the least of the troubles involved.

How many people know that the validity of their policies is affected if they carry additional insurance without the consent of each of the remaining companies? Under the Quebec law the policies become entirely void, while the Ontario Statutory conditions provide that in such event the assured shall not recover in excess of sixty per cent. of the loss. It is true that most policies contain the clause, "Permission for other concurrent insurance," but if part of the insurance is non-concurrent there is obviously no permission. Fortunately for many insured, the companies usually err on the side of leniency, but the adage, "It is better to be sure than sorry," is exceptionally true in the matter of insurance.

British Credit Insurance

ONE of the offshoots of the British Trade Corporation which has, with Government assistance, been formed in England to stimulate trade after the war, is the Trade Indemnity Company. This Company is entirely owned by the British Trade Corporation, and has as its object the financial protection of merchants and manufacturers in respect of their endeavors to develop overseas business.

The Company will issue policies insuring the payment of commercial debts, thus enabling an exporter to increase his volume of foreign trade without incurring greater capital responsibilities. Under approved conditions the Company will advance to the assured the amount of its liability in respect of any debt insured, against transfer of the debt and payment of interest on the amount advanced, until the net outcome is ascertained. The Company will grant policies either insuring up to two-thirds of a client's turnover against ultimate loss, or insuring up to three-fourths of the amount of an individual debt. Policies will also be made to cover a proportion of such losses as may arise should a forced resale of goods become necessary in consequence of buyers becoming insolvent and thereby unable to take up shipping documents.

In pre-war days Germany developed this form of insurance very widely and with great benefit to her export trade. There can be no doubt that the new Company will

prove to be an important factor in the development of the British Overseas trade, and the possibility of establishing a similar source of protection in Canada would seem to demand earnest attention.

A Lesson from South Africa

THE war is teaching every country to cultivate self-reliance and to become as far as possible self-contained. Tariff protection is the surest means of attaining that object; free trade is the surest means of defeating it, because the latter policy makes a country dependent upon the entire world.

In these pointed words the *South African Commerce and Manufacturers' Record* crystallizes a number of arguments in favor of the adoption of a protective policy after the war. Its article on this subject, which we reproduce in full in this issue of INDUSTRIAL CANADA, might very well have been written by a Canadian and about Canada. The situation is almost exactly the same—the growing scarcity of labor, the shortage of materials, the uncertainty regarding after-the-war conditions and the necessity for the protection of industry. All these are touched upon. It was through the tariff that the industries were established in the first place, industries which have played an important part in the war, and it must be through the tariff that these industries shall be maintained.

"South Africa," concludes the article, "will, in the near future, have to face the problem of finding employment for her returned soldiers. A protective policy, based upon a scientific tariff, will be the means of opening many doors, through which employment at remunerative wages may be found."

If this is to be the policy of South Africa and if it is to be the policy of other nations, can Canada afford to risk its future welfare by following along any other line?

Protect Canadian Industries

UNLESS we make grave mistakes of omission, or commission, we have a right to look for a period of great prosperity and auspicious achievement after the war, and we may all be surprised to see with what ease the nation will be able to carry the burdens which we shall have inherited from our war expenditures—always provided that our house is ordered with reasonable wisdom by those in authority.

We are entirely convinced of our ability to meet the situation successfully, if we mobilize the brain power of the nation, and if due weight is accorded to the experience and matured judgment of the spokesmen of business, and if, whilst recognizing and respecting the demands of progress and social justice, we do not venture too far into uncharted waters.

We must and should cheerfully recognize the democratic spirit and tendencies of the day. We must help to

arrest such shortcomings of the present social order as justly call for reform, sincerely and persistently, if class misunderstandings, class animosities, and the resulting evil consequences are to be avoided. In Canada, we have already had too much sinister suggestion of class privileges and of alleged conflict of sectional interests. It is the aim of the Canadian Manufacturers' Association to draw together similar interests throughout the Dominion, and thereby to knit bonds of kinship, and to strengthen the national fabric. We must realize the correlated and inseparable interdependence of all our business, be it agriculture, manufacture, or commerce. We must be united in aim and in purpose, and guard our interests by suitable fiscal and other legislation.

The war is to a very large extent a test of organizing ability and industrial power. On that field of battle, the experience and training of business men entitle their voices to be heard. They must not be raised, of course, in carping or partisan criticism. But we shall fulfil a useful function by seeking to ascertain facts, to point out errors and shortcomings, to suggest remedies, to offer constructive advice.

Equal in importance to industrial effort is economic power and endurance. There again is a task calling for business to make its thoughts articulate and effective through organization.

After the war will come the period of adjustment, and on the way in which our financial and industrial leaders handle this problem will depend the successful liquidation of our present credit extensions. It will be necessary for us to conserve our strength by every wise precaution we can devise. Chief among these measures must be an adequate protective tariff. The competitive conditions which peace is certain to bring will be so different from those that exist in ordinary peace times that we shall have to put up protective bars, as will every belligerent nation, rather than lower them, in international trade.

As to the effect of preferential duties, whatever the armchair economists may say, the question has been settled by the only sure test—that of experience. Of this the history of the sugar industry of Cuba affords an excellent example. About fifteen years ago, the United States gave Cuban sugar a preference in American markets of slightly over a farthing a pound, with the result that the production has been increased from about 1,000,000 tons to 3,500,000 tons, and this without increased cost to the consumer, owing to the increase in the supply.

Experience has shown that import duties do give security in domestic markets. And with security, capital is induced to invest in improved plant and extended operations, and hence obtains greater efficiency, increased production and better conditions for the workers. Experience has proved that preferences tend to direct trade into certain channels, and thus to secure to the country giving the preferences control of the products concerned. Duties and preferences are useful, and, indeed, in some industries even necessary. They are the means of defence—the

trenches and dugouts of commercial war. But protection is for labor as well as for capital. Unless capital is profitably employed, labor cannot be. A loss of dividends means a loss of wages.

Canadian industries are varied and numerous, and some of them are colossal. Canadian industry is thoroughly competent in many branches, and, in some, highly skilled. They have been nourished by protection to the point where in the present economic necessity of the country they are largely the reliance of the country in its part in the world war. The battle lines would be nothing if unsupported by economic lines, capable of large productions of the things that enter into the conduct of war.

Agriculture, industry, and labor alike see what is coming; that after the war the hottest contest for trade ever known, with all the leading nations participating, will be inaugurated and carried on with tireless industry; that the nation unprepared cannot hope for results in the contest, and that the nation best prepared and employing the best agencies of progress will make the most progress in the new times that are dawning.

We are stimulating agricultural production. Surely industrial production must also be stimulated, otherwise we shall see unemployment, financial depression and stagnation, while our trade rivals are marching to opulence and power.

There is not a town in Canada but whose citizens are willing witnesses to the value of its factories. Let us quote one example: *The Orillia Packet*, in a recent issue, testifies in terse and telling epigram to its experience of the value to our Canadian cities and towns of their manufacturing interests, thus: "We, in Orillia, know what manufacturing has done for the town. There is no anxiety here to be rid of the manufacturers. On the contrary, the constant cry is 'How can we get more of them?'" At the same time, in building up the town, our factories have afforded a ready and welcome market for farm produce of every description, thereby adding materially to the value of farm property. England's blind and stupid adherence to the theories of Manchester did much towards building up the mighty German Empire, one of the most highly protected countries in the world, and greatly aided that hostile nation in supplanting the manufacturers of Great Britain in the markets of both hemispheres until the Mother Country was fast becoming a jobber in German wares, instead of the first-hand seller of her own. This war, it may be hoped, has taught England much. It must at least have taught her to distrust the peace-at-any-price free-trade doctrinaires who for half a century or more worked unwittingly in the interests of the United Kingdom's greatest rival and bitterest foe, and came near being the utter undoing of their own country. With that distrust will come a measure at least of fiscal reform, in the direction of protection or preferential tariffs, and it is not likely that while the mother of free trade is turning her back on that policy, Canada will take the retrograde and suicidal step of abandoning protection."

Let us learn from the experience of the past, and from these recent encrimsoned years that an efficient and prosperous and diverse industry is absolutely essential to national well-being.

The theory that the settlement of the North-west means the division of Canada into two great hostile sections, the East devoted to manufactures, and the West to agriculture, is purely fanciful. The idea that Western Canada can be placed in antagonism to Eastern Canada on the tariff question is born of ignorance regarding Western resources. It is alleged that the West is unfitted by nature to be a manufacturing country. But nature has been kinder to the West than free-traders suppose. There is no reason why manufacturing industries should not spring up in towns and villages throughout the Canadian North-west just as they have in the towns of Ontario, in spite of the predictions made for many years that Ontario could never become a manufacturing province. The free-traders used to be just as emphatic in declaring that Ontario was not naturally adapted for manufacturing as the are in under-rating the industrial possibilities of the North-west.

In the presence of the great peril to-day, who does not see the folly of depending upon foreign nations for products essential for our armies and our people? Who does not rejoice that the protective policy which has made Canada strong and prosperous and fit to perform a vital service in the struggle against autocracy triumphed over the policy advocated by the free trade party during the last fifty years?

With these lessons so fresh in memory, is it advisable after the fight shall be won to agree to "the removal, so far as possible, of all economic barriers," which would inevitably bring to Germany the very object for which she took up the sword—the opportunity to force her commodities upon unwilling countries, extend her commerce, and strengthen her economic power?

Individual Liability For Fires.

A SUBJECT, which is daily attracting greater attention, is that of individual liability for damage caused by fire. As has been stated before, an individual can even now be held liable for damage caused by a fire which results from his own carelessness or negligence, but the negligence must be proved. In many European countries the person responsible for the fire must prove that he was not careless or negligent. The question is also raised whether the responsibility for a fire should not be made the subject of criminal prosecution and the crime be punished by a term of imprisonment.

Many manufacturers appear to be strongly in favour of dealing with the problem under the Criminal Code. Indeed it is difficult for any man to oppose the suggestion without tacitly admitting that he is not as careful as he might be in his own housekeeping. It is universally agreed that "something" must be done to check the waste of property, which appears to be growing worse instead of better. What

that "something" will be depends largely on ourselves. Our law-makers will require a considerable body of public opinion behind them before they find courage to embark on legislation of so drastic a character.

An Urgent Request from Australia

A REQUEST has been received from the Australian Government, through the medium of the Secretary of State for the Colonies, urging the Canadian Government to take all possible steps to ensure that bills of lading for any goods shipped to Australia from Canada should not be issued beyond the actual port of discharge. We have been requested to give prominence to the cablegram in which this request was embodied and to urge members of the Association, who are accustomed to ship goods to Australia, to fall in with the desires of the Australian authorities. The following is the text of the message:

"Government of Australia urgently desires that Bills of Lading for goods shipped to Australia should be issued only to ports of actual discharge of vessels carrying same. This already practice in United Kingdom. Owing to limited tonnage engaged in Australian coastal service at present, great delay and heavy expense involved on goods awaiting transshipment to final destinations. Shipping Controller supports request of Government of Australia. It is hoped that your Government will take such steps as are possible to ensure the Bills of Lading for any goods shipped to Australia from Canada are not issued beyond actual port of discharge."

What About a National Trade Mark?

IF Bills now before the United States Congress are enacted, a national trade mark for the protection of United States goods abroad and the insuring of a high standard of quality in manufactured products will be designed and its use authorized. One purpose of the trade mark will be to offset the increasing practice of pirating the trade marks of individual firms in foreign markets.

As a rule the average manufacturer does not consider export business until he has exhausted the possibilities of the home market. In the meantime it does not occur to him that he ought to be protecting his trade marks in foreign countries. When the time comes that he wants to develop export trade he may find that unscrupulous importers have already registered his marks in their own names. His shipments are liable to confiscation upon the complaint of these importers, who cite their trade mark registration as proof of ownership of the mark and also adduce evidence to show that they were the first users of the marks in their own countries. And they have the law on their side.

A national trade mark, owned and protected by the Government, offsets this trickery, for it enables manufacturers to outwit pirate merchants simply by substituting the national mark for their private marks on all shipments to countries which permit such practices.

Another argument advanced in favor of a national trade mark is that it would be granted only to the manufacturers of goods that reflect credit on the industries of the country and would thereby tend to raise and maintain the standard of manufactured goods. This seems rather an important consideration, though it is countered by a criticism made by the Merchants' Association.

"If the trade mark were widely used," the Association states, "it would be practically impossible to control and maintain the standard of all of the articles eventually licensed to bear it. The attachment of the trade mark to inferior and cheap merchandise, and to goods not possessing the merits which their sellers claim for them, cannot but bring into disrepute all goods bearing the mark. . . . It is the maker and seller of merchandise of unestablished value and merit who will adopt and flaunt the national mark, rather than firms handling goods whose name, mark, and value are established abroad.

"It is to be noted that because of these abuses and misrepresentations the Government found it necessary to withdraw the privilege of putting pure-food guarantee numbers on merchandise sold at home or abroad.

"The Association believes, therefore, that serious injury to our national business reputation abroad would inevitably follow the enactment of the bill—a matter which is of profound importance to the entire country."

Tender Forms in Duplicate

MANUFACTURERS, who are being called upon from time to time to submit tenders on government or corporation work, have a grievance in that as a rule only one form is supplied on which to enter particulars of the tender. These forms are frequently quite complicated and, as it is always necessary for purposes of record to preserve one or more copies, the task of making out duplicates is a heavy one. All this extra, and quite unnecessary, copying which takes time and costs money, could easily be obviated if the government or corporation officials calling for the tenders would simply send two or three of their printed forms instead of only one as at present. The cost of the duplicate forms would be quite infinitesimal cost of the duplicate forms would be quite infinitesimal offices of the several firms submitting the tender. Will not the government and large corporation officials take note of this suggestion which, small enough in itself, is yet in line with the policy of thrift about which so much is heard nowadays?

In an early issue *Industrial Canada* plans to describe some of the efforts made by Canadian manufacturers to encourage their employees in the production of food-stuffs. We invite any of our readers who have carried out plans of this sort during the present season, to send us an account of their achievements.

News and Views of the Association

In this Department, which will now be a regular monthly feature of INDUSTRIAL CANADA, will be found a record, contributed by the Secretaries and Department Managers of the Association, of the various activities of the preceding month. Owing to the fact that we are now in the midst of the holiday season, and that few committee meetings are being held, the budget for the present issue is necessarily light. However, members are urged to acquire the habit of reading and checking over the contents of this Department carefully.

Trade Sections Encouraged

The Executive Council of the Canadian Manufacturers' Association desire to give encouragement to the formation of Trade Sections or Sub-Branchees of the Association for the effective handling of local or trade problems, to enable the members to take an active interest in the work of the Association and, in general, to further the other interests of Canadian manufacturers.

The By-laws already provide that the members of the Association in any district may, with the permission of the Executive Council, organize themselves into a Branch. Such Branches are autonomous in matters that concern themselves only, but in all other matters, they report their findings to the General Committees, or direct to the Council.

The business men in Canada are facing many new problems. When the war is over, we shall be called upon to face a whole series of fresh problems, some of which will affect all manufacturers, and some the manufacturers in a particular locality, or only the manufacturers in a particular line of trade. This will mean that the entire machinery for domestic business must be put into the smoothest possible working order.

Every committee, every branch, every trade section is a producer of ideas. Ideas are to a commercial organization what raw materials are to a factory. The Canadian Manufacturers Association is so thoroughly organized that it knows how to make the best use of such materials in the best interests of the members. It is because it has the materials and does the work that it has been successful.

In taking the matter up, members will probably find that other members will be ready to discuss the matter fully with them and to co-operate when they decide what action is necessary in their several districts.

Increase in Carload Minimum Weights

Some time ago the Canadian Railway War Board approached the Board of Railway Commissioners, Ottawa, with a view to securing the sanction of that body, for a general increase in minimum weights applicable to articles moving under what are known as "commodity rates" between points in Canada east of Port Arthur. The Board of Railway Commissioners referred the Canadian Railway War Board to the Association for the purpose of determining the effect such an advance would have on the traffic. Immediately upon receipt of this, the Transportation De-

partment sent out some four hundred circular letters, advising those members interested of what was proposed. Quite a number of replies were received including objections from certain manufacturers, which showed that it would be impossible to load some of the minima proposed by the carriers.

On July 18th and 19th a conference was held in the offices of the Association, there being present various railway officials and representatives of the shippers; at which time the various objections were thoroughly gone into and adjustments arranged, which it is believed will be satisfactory to all concerned.

Interswitching

It will be remembered that new interswitching rules and charges were set forth by the Board of Railway Commissioners in General Order No. 230 to become effective on July 1st, 1918. The Association entered a protest with the Board of Railway Commissioners against proposed Section 14 of this order, which practically took away from the shipper his present right to route carload freight. The Board accordingly postponed the Order until August 1st by General Order No. 239, and have again extended this postponement until October 1st. In the meantime the Association is looking after the interests of all members in regard to this question, and will report anything further, in due course.

Transcontinental Rates

Some time ago the railway companies advised the Transportation Department that they intended to advance their commodity rates applicable on shipments moving from points in Eastern Canada to Vancouver, Victoria and other Pacific Coast terminal points. The initial proposal of the railway companies was to advance these rates by sub-dividing Eastern Canada in line with the subdivision of Eastern United States, which was made effective March 15th, when material increases were made in rates applying to shipments moving from points in the United States east of the Missouri River to Seattle, and other United States Pacific Coast terminals. Generally speaking our rates, for many years, have been made by the addition of arbitraries to the rates applicable from Chicago to Seattle. During that period, however, rates from points in the United States—Chicago and East—were the same, that is, a rate from New York and Buffalo

would be the same on a given commodity as the rate from Chicago to Seattle. Had the railways carried out their proposal, it would have meant that higher rates would have applied from Montreal than from Toronto, which is not now the case. However, after a conference, the railways agreed on the following basis:

From points in Eastern Canada (Montreal to Windsor), the rates to be the same as those applicable from Buffalo to Seattle.

From Quebec to Sherbrooke, rates to be half of the difference between rates applicable from St. John-Halifax and Montreal groups.

From Halifax-St. John group, same rates as from New York-Boston to Seattle. Exception: While the above is the general basis, there were certain items in Westbound Tariff No. 1, which were not based on the regular arbitraries over Chicago-Seattle, nor were they allowed to mix in the same manner. It is accordingly stated by the railways that they would establish on such commodity rates made by advancing the then existing rates 10 per cent. plus 25 per cent., the 10 per cent. being the advance which was allowed in class rates under the Board of Railway Commissioners' of Canada General Order No. 212, and the 25 per cent. being that added to the rates in the United States by McAdoo's Order No. 28.

When the question was finally presented to the Transportation Department in the form of a proof tariff showing exactly what the railways intended to publish, a complete check was made of the tariff including the checking in of rates applicable from Buffalo to Seattle. The result of this check was the preparation of three memoranda covering twenty pages, containing errors which had been found in the proof. At a meeting held in the Association Offices, July 18th and 19th, these various errors were carefully gone into by the representatives of the railways and adjusted.

Canadian Fire Waste

Up to the present the fire loss of the Dominion of Canada is reported to be 25 per cent. greater than for the corresponding period of last year. If this rate of destruction continues, the loss will exceed thirty-two million dollars in 1918, and, together with expenditures upon insurance and fire protection, will constitute a burden of over \$65,000,000. This means about \$10 out of the pocket of every man, woman and child in Canada, or almost \$40 for the average family.

Our Insurance Committee, in pursuance of the interest aroused in fire prevention matters through the discussion at the recent Convention in Montreal, are in course of arranging for a definite programme of action in co-operation with the Commission of Conservation. The establishment of proper methods of general fire prevention is undoubtedly one of the most urgent needs of Canada.

Fuel Situation

There is no doubt a great feeling of apprehension exists as to the prospects with respect to next winter's coal. At this time last year coal was quoted in Toronto at \$9.50, while to-day it is \$11.00. But what is of more real concern is, that it seems to be impossible to get any, even at \$11.00. There must be something out of joint when dealers refuse to take orders?

On the other hand, it is officially explained that there has been a great demand for coal early in the season this year from those who can afford to lay in advance stocks, and this has depleted dealers' stocks. It must also be realized that the full year's supply cannot be brought into

Canada within a brief period. It is encouraging to know that the coal has moved in very satisfactorily during the present coal year, and to be informed that orders will doubtless be filled as the coal is available. At the same time the present year's allotment of anthracite coal is somewhat disappointing as compared with the last coal year, and the Fuel Controller is still in hopes that he may get it somewhat modified.

It would appear that the Province of Alberta is amply able to look after the domestic and industrial requirements of the Western Provinces. With the short crop in that Province there will be sufficient men and transportation facilities available.

The Fuel Committee of the Association, under the direction of Mr. W. H. Shapley, has the matter well in hand and is contemplating a meeting at an early date.

Labour War Policy

The Dominion Government's Declaration of War Labour Policy enunciated by the Minister of Labour, and approved by the Cabinet, provides for the constitution of a Board of Appeal from recommendations made by members of boards of conciliation established under the provisions of "The Industrial Disputes Investigation Act, 1907," the Board of Appeal to be composed of five members, two appointed on the nomination of the Executive of the Canadian Manufacturers' Association, two by the Executive of the Trade and Labour Congress of Canada, and a Chairman to be chosen by them, or, failing agreement, by the Minister of Labour.

This policy has been promulgated as a result of the present labour unrest in the Dominion, and the recommendations termed a "Labour War Policy" of the Minister of Labour, are admonitory upon employers and employed alike, rather than mandatory. It is provided that in case a dispute cannot be settled by negotiation between the two parties, recourse shall at once be had to conciliation through the Industrial Disputes Investigation Act, 1907, and should an agreement fail to be reached on the decision of the Board, the matter will be referred to the Appeal Board, which will review the findings and evidence and whose report will be final. The Executive of the C.M.A. have nominated as representatives of the employers S. R. Parsons, British American Oil Co., Ltd., Toronto, and G. H. Duggan, Dominion Bridge Co., Ltd., Montreal.

Housing

In Canada as in Great Britain and the United States, there is the same need for increased housing accommodation in connection with war industries, and the same difficulties in securing the provision of such accommodation by means of private enterprise. Capital which is available in normal times for building purposes is no longer obtainable and, such as is obtainable, can only be had at a much higher rate of interest. There has also to be faced the greatly increased cost of material and labour. Meantime the problem is becoming increasingly acute. In Toronto the increase of population is proceeding at a rate which means that only one-tenth of the houses required to accommodate the increase are being erected. If this be the condition to-day, what is it to be when the men overseas come back and have to be absorbed in the social life of the country?

Meantime the Housing Committee appointed by the Ontario Government on the recommendation of the C.M.A. and other interests, with Sir John Willison as Chairman,

is busy compiling the necessary statistics required by the Government. A joint committee of the City Council is also considering the situation, and it is hoped adequate remedial action will be taken without delay in relation to the supply and demand of the whole people. Toronto now needs housing accommodation for 5,000 families and the city itself owns considerable blocks of land which could be made available.

Federal Bankruptcy Act

Although this bill has been laid over with a view to its being taken up at the next session of Parliament, it will meantime receive the careful consideration of the Legislation Committee, and in order that the chief organizations interested may have an opportunity of discussing it together, the Legislation Committee has proposed a joint conference with a committee of the Toronto Board of Trade and representatives of the Canadian Credit Men's Association.

There is no more important consideration with respect to commercial law than the growing sentiment towards the uniformity and assimilation of our provincial statute law. For that amongst other reasons, it is necessary that some effective central control be provided in the administration of the Bankruptcy Act, if it is to be administered by the provincial courts, otherwise the result will inevitably be variety and confusion instead of uniformity of point of view and practice.

Training Youth For Industries

The prizes and scholarships contributed by members of the Toronto Branch of the Canadian Manufacturers Association are proving a very important factor in building up the regular attendance of pupils at the Central Technical School. Dr. A. C. McKay reports that from these classes there is a constant stream of young men and young women who are entering upon work in our industrial establishments with an excellent general industrial education and with an aptitude and attainment which will ensure success in life.

In pursuance of the scheme of scholarship inaugurated three years ago, the Principal of the Central Technical School has been notified that the members of the Toronto Branch will award fifty-one industrial education scholarships of \$25 each, for competition this year. Members who desire to contribute additional scholarships may notify the Secretary of Toronto Branch to that effect.

Official Effrontery

In connection with the further projected increase in transportation rates to become effective on 12th inst., the officials of the Canadian Railway War Board are pleased to say that the manufacturers' profits have increased "out of all proportion to the actual increase in the cost of production." This taunt, while too general to have any meaning, is nevertheless mischievous.

Freight rates have been increased in Eastern Canada not 30 per cent. since the beginning of the war, as alleged by the Railway War Board, but over 50 per cent. during the past three years. Besides, the railways have imposed millions of dollars of loss on manufacturing and other business interests through the inadequacy and inefficiency of their transportation.

The Railway War Board officials take no account of the enormous increase in the price of raw materials and cost of labour. Public servants should at least be taught that they do not carry the privilege of gross mis-statement into the exercise of their "nobile officium." It is for

Parliament to deal with such actions. So soon as manufacturers, by the application of private capital and undaunted industry, make profits, giving employment and good wages to the worker, the Government steps in and appropriates the greater portion, while pro-railroad officials are pleased to rule the manufacturer into the profiteer class.

The plain truth is that the manufacturers of Canada have borne their burdens and accepted penalties as never before most graciously and patriotically.

New Committee at Work

Pursuant to resolution of the Executive Committee, an advisory committee to supervise the publishing of INDUSTRIAL CANADA has been appointed, consisting of J. S. McKinnon, J. Allan Ross and J. F. M. Stewart, with J. F. Ellis as an ex-officio member. The committee held its first meeting on July 19, when Mr. Stewart was appointed Chairman. Various proposals were under discussion for the improvement of the paper, with a view to making it of greater usefulness and service to the membership of the Association. Among other matters decided upon, it was arranged that a monthly meeting of the committee, at which the managers of departments should be present, should be held for the purpose of arranging for the adequate presentation to the members of an account of the activities of the Association.

Copies of Canadian Patents

A number of members have evidenced some interest in the question of getting printed copies of Canadian patents. It is interesting to read the following quotation from a speech of Sir Robert Hadfield, head of the great firm of Hadfield, Limited, Sheffield, England, on this subject:—

"As an example of the antediluvian policy of our Empire on this question, an Englishman in this country cannot get a copy of a Canadian patent without sending to Canada, and even then he gets only a typewritten copy, as patent specifications are not printed there."

In England printed copies are sold for about 15c. and in the United States 5c. each. It is said that under the present system a typewritten copy of a Canadian patent costs on an average over \$2.00 and can only be obtained after considerable delay. Of course, it is recognized that there are many difficulties in the way of getting copies of all Canadian patents printed, but we should like to have the views of some of our members as to the urgency of making some recommendations on this point.

The Toronto Exhibition

In spite of the war, the Canadian National Exhibition, to be opened by Lord Shaughnessy on the 24th August, gives promise of being well ahead of all previous records in special features and public patronage. Canada's varied activities, the products of her industry, her achievements in every field of modern development, her delight in the vivid and spectacular, her aspirations towards the highest in artistic emotion, even her participation in the deadly clash of nations, all unite in this yearly renewal of youth. It is the Dominion's best, supplemented by much that other and older nations have to offer. Here every one finds interest, instruction, amusement. A year of travel in Canada can there be condensed into a few days' sight-seeing.

The expression of joy in achievement inspires responsive pride in every casual spectator, strengthening the

feeling of fellowship with an achieving people in a country worthy to live in, and that is the supreme test of a country worthy to die for. Even indolence and idle curiosity have a place in the varied concourse. From the dreamy delight of the paradise of flowers or the inspiring appeals of genius in the collected treasures of art, to the grotesque entertainers of the Midway, or the brilliant and jarring pyrotechnic climax, there is relief from every engrossing concentration, with endless and varied reminders of the magnitude of Canada and her people.

Again the directors have made important additions to the building accommodation, to meet the ever-increasing demand for exhibition space.

Special attention is given this year to the solution of the problems of agricultural betterment. The growing importance of Canadian manufacturers of agricultural machinery will be shown in a new section devoted to this branch. The Engine and Thresher Section, under the chairmanship of Mr. R. Harmer, has been active, and the fruit of its diligence will be evident. All the leading lines of Canadian tractors will be in evidence. That new unit which makes power farming possible bids fair to revolu-

tionize completely the present system of farming. The 1918 tractor shows a vast improvement over its predecessor of a year ago. It is needless to say that the shortage of farm help has created a new interest in and a big demand for Canadian-made tractors.

There will also be war and patriotic features. There is peculiar reason for rejoicing in this aspect of the great show, because this year the patriotic and war features will represent a clearly victorious cause.

Information on File

The attention of members is directed to the fact that a great deal of information on many matters affecting trade and industry is available in the Commercial Intelligence Department at the head office. The Association is in receipt of a large number of trade and government publications from all parts of the world, and it is one of the functions of the Department to review this material and place it in shape for reference whenever an inquiry is received. The following list gives some idea of the variety of subjects about which recent information is now on hand:

- United States Steel Priorities Schedule.
- Outline of basis for Price Agreement on Cotton Goods.
- Licensing of Farm Implement Manufacturers.
- Schedule of Style and Color Regulation of Shoes.
- Investigation by Manitoba Minimum Wage Board.
- Report of British Committee on Commercial Policy after the war.
- Opinion of National Association of Manufacturers on Policy of United States National War Labor Board.
- Directors of Government Offices in Washington, including those organized for special war activities.
- Authorized list of United States Government Purchasing Agents, including usual departments and war administration.
- Board of Umpires to act in Labor Controversies which War Labor Board cannot settle.
- Research fellowships and scholarships in Canada.
- British Priority Scheme for orders and work.
- List of British War Trade Ministries Departments, Commissions and Committees.
- Proposed legislation on Patents and Trade Marks.
- British Government Labor Committee.
- Regulation of Production of "War-Time" boots and shoes.
- State grant for purchase of Peat Machines.
- State Subsidies for Mercantile Marine.

The Manager of the Commercial Intelligence Department will be glad to hear from members who may wish information on any of the foregoing subjects.

Visitors From Overseas

The Commercial Intelligence Department was visited recently by a member of a well-organized commission firm which is established with head offices in Cape Town, and branch offices in Johannesburg and Durban and various other large centres in South Africa. This firm is interested in representing Canadian manufacturers of timber, rubber, flour, dry goods, belting, machinery, and various other largely used commodities. In some cases they are open to make outright purchases.

If any of our members are interested in communicating with this gentleman, we shall be glad to put details at their disposal.

We have also a communication from an importer and manufacturers' agent in Melbourne, who visited Canada some time ago and has since done very considerable business for a number of Canadian manufacturers with whom he made selling arrangements while in this country. On this occasion he has supplied us with samples of felt, largely used for the manufacture of slippers. Unfortunately, he cannot be supplied with this material from Canada, but he is in a position to send enquiries along other lines and handles his business arrangements with such accuracy and on such favourable conditions for Canadian manufacturers that he deserves the encouragement and support of Canadian manufacturers. We shall be glad to give details to our members.

FORMER C.M.A. OFFICIAL, WHO UNDERTAKES IMPORTANT TRADE DEVELOPMENT WORK



—B. and C. Press Photo

Herbert Thomas Meldrum

Mr. Meldrum, who was from 1910 to 1913 Secretary of the Montreal Branch of the Canadian Manufacturers Association, and from 1913 to 1915 assistant general secretary, and who since then has been in charge of the war office purchasing agency of the C.P.R. in London, has recently returned to Canada to undertake important trade agency work. He has been appointed sole agent in Canada for R. Martens & Co., Limited, London; Comptoir Franco-Anglo-Russe, Paris; R. Martens & Co., New York; West Africa Merchants, Limited, Accra, Gold Coast, Africa; Russia Trade Corporation of America, New York, and the Russo-British Finance Co., Limited, London. Mr. Meldrum's office is 14 St. John Street, Montreal.

Harnessing the Tides of the Bay of Fundy*

Power Potentialites Derivable from the Installation of Current Motors at Cape Split Declared to be Sufficient to Supply all Needs of the Maritime Provinces, While the Scheme Has Been Declared Feasible by Eminent Consulting Engineers

By **PRINCIPAL W. L. ARCHIBALD**

Acadia University, Wolfville, N.S.

WATER power has always been a subject of deep interest to the people of the Maritime Provinces. Cheap power attracts capital and ensures the rapid industrial development of any community. Because of the necessity of great activity in manufacturing during the war, and in view of our expectation of an even greater industrial activity when the war is over, this question of cheap power becomes of the utmost importance. With our great variety of mineral wealth, with our coal and iron available in huge quantities, with splendid natural resources, and with our many splendid harbors bringing near to us the markets of the world, "the provinces by the sea" ought to become a veritable hive of manufacturing activity. Cheap power is the one thing needed to place the Maritime Provinces in the front rank of the manufacturing world.

The rapid rise of the price of coal in recent years is making that commodity almost prohibitive as a source of power, except for the necessary industries of war-time. For this reason captains of industry and wise statesmen are turning their attention as never before to the consideration of every water power capable of economical development.

No Large Powers in the Maritimes

There are no large undeveloped water powers in Nova Scotia, and the same is practically true of New Brunswick, unless we except Grand Falls, which is situated at a point remote from the centres of population. It is probably true that if all the known water powers of the Maritime Provinces were developed, power would be available scarcely sufficient to displace the steam power now in use—hence there is no hope for any great industrial expansion from this source.

We have a wonderful example of what cheap power means to a province in the case of Ontario, with its Niagara and various other power developments linked up under the Hydro-Electric Commission of that province. What Niagara has done for Ontario, the Bay of Fundy should do for the Maritime Provinces. Here is power

at our doors in abundance ready to be harnessed. Three years ago at the Forward Movement Convention of business held at Amherst, President Cutten, of Acadia University, stated that if Germany had possessed such a supply of undeveloped power, her government would have supported scientific experiment and investigation for the solution of such a momentous problem in its relation to her industrial development. Dr. Cutten further stated that a prize of a million dollars might well be offered by the Government to the man who would point the way to a successful utilization of this vast source of energy.

Immense Wastage of Power

This power is practically unlimited, as it is estimated that some 400,000,000 horse power is daily going to waste in the Minas Channel which is three miles in width. Of this vast amount, it is further estimated that about 2,000,000 h.p. is capable of economical development, and can be developed by units according as the market for such power is developed. This is many times the total power now being developed at Niagara Falls, and if the promise of the advocates of power from the Bay of Fundy can be translated into fact, it will be the greatest water-power development in the world. If the scheme is feasible at all, it is big enough to supply the needs of the Maritime Provinces for all time, providing for the turning the wheels of all our industries, electrification of all railroads within transmissible distance of Cape Split, as well as heating and lighting the homes of many thousand people in many centres of population.

President Cutten and Prof. R. P. Clarkson believe they have found a feasible plan for utilizing the power of the Bay

of Fundy. In 1916 the plan was laid before a dozen different engineers in Canada and the United States, all of whom pronounced it workable. On their advice Messrs. Bogart & Pohl, of New York, were retained as consulting engineers, with instructions to spare neither time nor expense in giving the whole question an exhaustive study.

Col. Bogart, of this firm, is an



A Close-up View of the Tide Racing Through the Gap at Cape Split

*An address before the Maritime Branch, C. M. A., Moncton.



As Nature Has Created It—

engineer of established international reputation. He was chief and consulting engineer of the Niagara Falls power development, of the 85,000 h.p. Massena development, of the Sault Ste. Marie power, of the 60,000 h.p. at Chattanooga, and of many others. He has also been chief engineer of the New York subways, and held many positions on commissions and boards of the Government.

What Has Been Accomplished

Under the direction of Bogart & Pohl, a surveying party of eight worked at Cape Split for four months making a hydrographic survey of the vicinity of the proposed development, contour charts of cliffs, determining the velocity of the current, and gathering other necessary data which will be at the disposal of the construction engineers. About the same time there was constructed a large model of the Clarkson Current Turbine with the active co-operation of the S. Morgan Smith Co., of York, Pa. This model was completed and installed in the Conestoga River, where it was officially tested on June 6 and 7, 1917. The testing official was Prof. C. M. Allen, chairman of the Water Wheel Testing Committee of the American Society of Mechanical Engineers. The complete report of these tests establishes three things; (a) The Clarkson motor is by far the most efficient form of motor ever devised for the purpose, showing an efficiency of 44.1%, whereas the inventor claimed that a motor of only half that efficiency would have made his scheme successful. (b) This current motor is based on sound hydraulic ideas and is properly adapted for use at Cape Split under marine conditions. (c) That this form of current motor can be built at reasonable cost.

After a considerable study on the results of the tests and on the various aspects of the whole scheme, the consulting engineers, Bogart & Pohl, on Oct. 1st, 1917, presented a report, reviewing the work done, and endorsing the project both from the engineering and from the commercial point of view. In order to give a fair understanding of the views of these eminent engineers, a portion of their report is here given:

"The source of hydraulic power under consideration is the current which runs with great rapidity in the remarkable tidal race at the base of Cape Split and in the channel between that cape and the opposite shore. The tidal rise at the foot of Cape Split for the greater part of the year is from 35 to 45 feet. The rush and rapidity of this tidal current is

most impressive and indicates large potential power. The problem is transmitting this large potential power into practical commercial output.

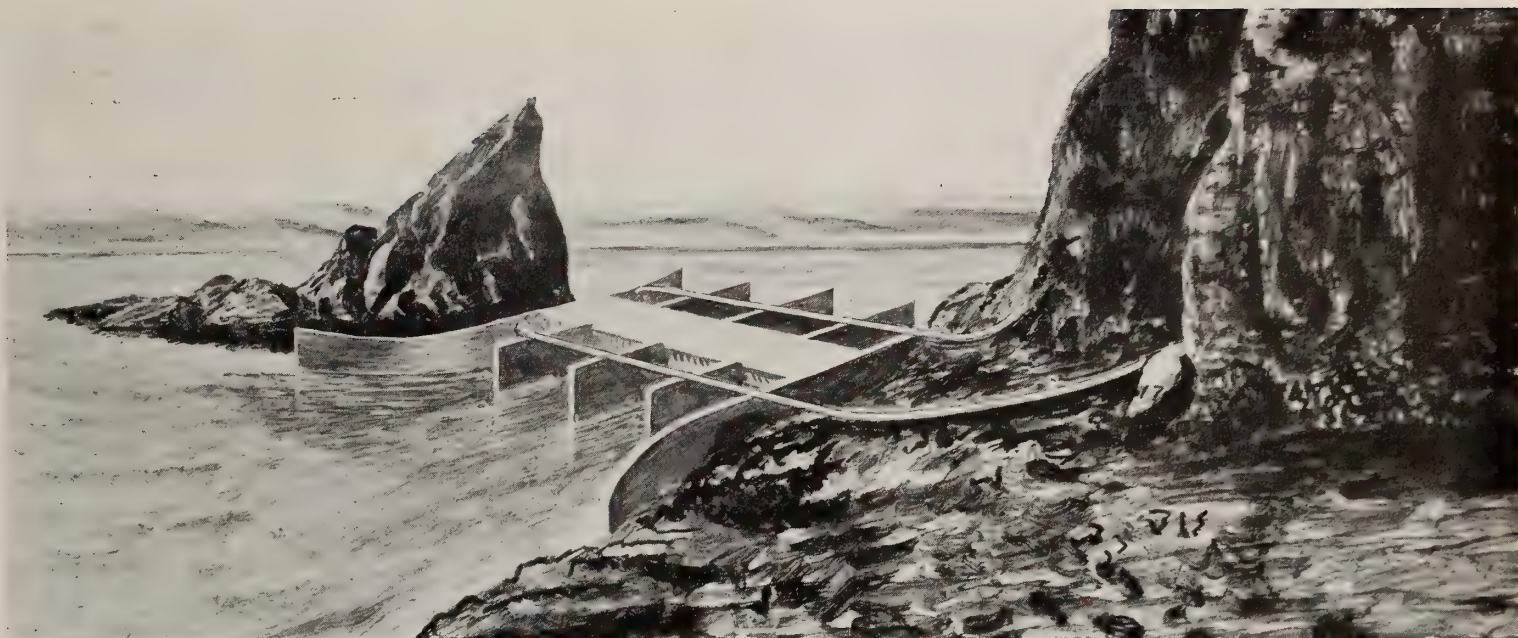
"The method to be adapted for getting actual power output from this tidal raceway is by the utilization of a current motor, of the construction invented by our engineer, Prof. R. P. Clarkson. A working model of this motor has been built under the joint supervision of Prof. Clarkson and ourselves, and a successful test of this working motor was made this past summer at Lancaster, Pa. Its output and efficiency were measured by Prof. Charles M. Allen, consulting engineer, and special expert in making this kind of a test. The efficiency given was 44.1%. The motor tested was made largely of wood and the losses by friction and from causes incidental to the first working construction were certainly large as compared with what would result from one of metal with rigid frames and fine adjustments of all working parts in a permanent machine.

"The topographical conditions at Cape Split are favorable for the location and installation of current motors. At the foot of a high location there is a reef of trap rock with its surface a little above ordinary low water. At a point about 420 feet from the rock bluff there is a natural rock pier over 100 feet high. It is proposed to make the first installation of current motors in the area between this bluff and the natural rock pier. A second installation can be made in the future in the reef beyond the pier, should the demand for power exceed that provided by the first development.

Power that May be Developed

"The motors which can thus be first installed will give an amount of primary power sufficient to afford, for a first development, a delivery at the switchboard in the power house of electrical current of 5,000 electrical horse-power continuous 24-hour power, or 10,000 h.p. continuous 12-hour power, or 15,000 h.p. continuous 8-hour power, or such other distribution of this power as the market demand may require. The estimates include all machinery for the first maximum of 15,000 h.p. at the switchboard.

"The variations in the flow and the actual cessation of any flow at high and at low water would be extremely serious obstacles except for the topographical conditions at Cape Split, which afford the opportunity of an installation giving continuous output of power, and the full regulation of that output.



—And as Man May Later Develop It

"The high bluff adjacent to the tidal channel referred to above extends along the shore of the Minas Channel. Less than half a mile from the point there is on the top of the bluff a large area with a surface 300 feet above mean tide. It is proposed to make a large reservoir on this elevated plateau and elevate water into this reservoir by the power developed by the current motors. At the foot of the bluff on the shore of the bay a power house will be built, in which will be installed hydraulic turbines actuated by water conducted from the reservoir by penstocks. The head will be 325 ft. Electric generators will be directly connected with these turbines together with the requisite switchboards, transformers, governors, and other hydraulic and electrical appurtenances.

"The reservoir will be of ample capacity to deliver a constantly regulated amount of water to the hydraulic turbines in the power house, thus permitting the pumping into the reservoir to be as intermittent as the conditions at the current motors require.

"The estimated cost of the whole development (Oct. 1st, 1917) and installation is \$2,495,000. These estimates include requisite excavations, construction and installation of current motors, electrical appliances and transmission to the power house; the cliff station reservoirs, pipe lines, valves and appurtenances; in the power station, building, draft tubes, scroll cases, tail race, motors, pumps, turbines, generators, transformers, switchboards, and all hydraulic and electrical appurtenances.

Some Interesting Estimates

"The total cost of 24-hour power deliverable at this power house at a 33% load factor is \$166.

"These estimates are at the present high cost of labor and material. The figure is now an unreasonable cost and has been exceeded in many successful installations.

"There would be available for sale at the power house 33,000,000 kilowatt hours per annum, which at 1 cent per kilowatt hour would be..	\$330,000
The cost of maintenance and depreciation and operation is estimated at	98,000
The net return will be	\$230,000
The total estimated cost of the entire installation is	\$2,495,000

"(Signed) Bogart & Pohl."

The paragraphs quoted above from the report of the consulting engineers constitute a strong endorsement of the project, showing that from the first unit of power, good returns can be earned on the cost of construction even at the very low price there mentioned.

President Cutten, Prof. Clarkson and their associates have expended about \$25,000 in order to investigate this problem, and believe they have a proper solution of the power problem of these provinces. In this opinion they are confirmed by the opinion of a noted engineering firm after 18 months of careful study and investigation. Moreover a number of other engineers and hydraulic experts have expressed their firm confidence in the success of the plan.

The Policy to be Pursued

The question remaining is: "How shall this, the world's greatest water power, be developed?" By private capital, by Government, or by co-operation of both? Shall the consumer get the benefit of cheap power at the hands of a Government commission as in Ontario? Or shall this great project be exploited by private capital along the lines of exploitation usual in such cases. That this power will be developed in the near future is certain. Mistakes in policy should be avoided before it is too late.

In a democracy such as ours, governments usually reflect public opinion. In other words public opinion can secure its desires at the hands of a democratic government. To-day the farmer is receiving generous consideration because he has made known his requirements. He has agricultural colleges, demonstration buildings, experimental farms, and even Government assistance in securing tractors. Is it not time that the manufacturers were asking something from the Government beside changes in the tariff? It is quite evident that nothing would be so great a boon to the members of the Manufacturers Association, as well as to the rank and file of our population, as cheap power, and it may be yours for the asking, providing you ask in the right place, and are sufficiently persistent and urgent in your request. The Maritime Branch of the Manufacturers Association are vitally interested in the subject of cheap power, and your hearty co-operation will be invaluable in bringing to pass the realization of your desires in this respect.

The Progress of Industrial Reconstruction

A Review of Some of the Recent Activities of the Canadian Industrial Reconstruction Association—Plans for Bringing the Agricultural West into Closer Touch with the Industrial East—Economic Research for Women Graduates of Canadian Universities

By SIR JOHN WILLISON

President, Canadian Industrial Reconstruction Association

AT the last meeting of the Association at Montreal the Executive Committee suggested that delegates representing agriculture, the commercial and industrial interests, and the universities and newspapers of Western Canada be invited to visit the industrial communities of Eastern Canada as the guests of the Association, with the understanding that an invitation to members of the Association to visit the West would be accepted, and that the sole purpose of such deputations should be to acquire more exact knowledge of national conditions and problems.

Many expressions of sympathy for this proposal have come from representative men in the Western Provinces. Recent Western visitors to older Canada who have had the opportunity of visiting some of the chief plants and industries in Ontario and Quebec frankly declare that their views have undergone some modification, and that the importance of industrial activity in the period of reconstruction cannot easily be exaggerated. They believe that differences between the industrial East and the agricultural West are not so great as have been represented, and that with good faith and mutual confidence all serious differences can be overcome.

To Visit Eastern Industries

Unfortunately it is impossible to arrange such a visit as is proposed during this summer. After full consultation with those who understand Western conditions and who are anxious that the project should be successful, it was decided that the visit should be deferred until next summer. In the meantime a Western delegation will be chosen, arrangements made with the industrial centres to be visited, and such a programme devised as will afford a comprehensive survey of the chief industries of all the older provinces. It is suggested that the delegates should proceed first to Sydney and be taken across the country to Windsor, perhaps with two or three days' stop at such places as Montreal and Toronto. The event would be much more enjoyable and not less instructive if the journey could be made partly by lake and river. All these details, however, can be settled later, and it is the view of the Reconstruction Association that in settling the programme Western opinion should be influential, and that the whole object should be educative and national.

One of the most active and influential men in Western Canada is Mr. G. R. Marnoch, president of the Lethbridge Board of Trade. He is distinguished for public spirit and for resolute assertion of his own opinions when he believes that he has the information upon which to pronounce judgment. Moreover, in his attitude towards general public questions he is animated by a genuine Canadian patriotism. Not long ago Mr. Marnoch visited some of the chief industries of Ontario, and in recent letters to *The Grain Growers' Guide* and *The Financial Times*, of Montreal, he says: "The first essential making towards solidarity among the citizens of Canada is that there should be far more personal contact between the people of the East and the West. Before we can understand what is in men's bosoms we must understand something about their business; and the way to begin to do that is to see the

men and at the same time to see their factories and their workpeople and helpers. There are two proposals before us now both looking towards the effecting of better relationships between the East and the West. The one that was first suggested was that the farmers and business men of the West should meet the manufacturers in joint conference; but in the meantime the recently formed Canadian Industrial Reconstruction Association has made the suggestion that some representative men from the West should make a tour around the producing and manufacturing plants in the East. Remembering some of the initial difficulties in the first meeting of the Joint Committee of Commerce and Agriculture, when the farmers first met the financial men of our own prairie provinces, the suggestion is respectfully submitted that personal acquaintanceships should be made, and personal examination of at least some of the big manufacturing plants, before any attempt at a formal conference on such a knotty question as the tariff is gone on with. The writer had the advantage, before settling in Western Canada, of living and doing business in various parts of the world, and had therefore, perhaps a reasonably broad outlook; but it may be confessed that a sojourn of several years on the prairies, among the big fellows who farm there, among the many difficulties that a new country always presents, had tended to an over-estimation of the importance of the business of agriculture in the building of the nation, and to a corresponding lack of knowledge and vision of the necessity for a simultaneous development of mining, lumbering and manufactures. A recent visit to the East has readjusted the mental balance, and frank confession is made that one may learn that there are important industries other than agriculture in the country, and that there are some pretty big and understanding fellows among those who initiated and who carry on these enterprises. It would be a pity if we could not get beyond the point of thinking that all of the opinion of the country is represented by the extremists of either side, for there are big, broad-minded men in the East just as there are in the West. Let's get together and see what we can do about it, for "a house divided against itself cannot stand."

Fellowships For Women Graduates

The Association has been in communication with the University of Toronto and McGill University in connection with the post-graduate fellowships for economic research to be offered to women graduates. Sir Robert Falconer, president of the University of Toronto, before he left for Great Britain was consulted as to these fellowships and as to the proposal for an interchange of students between Toronto and Laval. He expressed himself as wholly favorable to both proposals, and believed that from the suggestions of the Association only the best national results could follow. While the work in research will be carried on by women only in Montreal, Toronto and Winnipeg, the fellowships will be open to women graduates of any Canadian university, and thus an opportunity will be afforded young women in any part of Canada to compete for these scholarships. Mr. Stephen Leacock, professor

of political economy of McGill University, is as favorable to the reconstruction scholarships as Sir Robert Falconer. The Association is also in communication with other universities and educational authorities in Canada, and it is hoped that definite arrangements for the competitions for these scholarships can be settled by the beginning of the college term. It is hoped that Sir Robert Falconer will assist in settling with Laval University the exact conditions on which French and English exchange scholarships shall be awarded.

Work of the Women's Department

The Association has established a Women's Department, which will be under the direction of Miss Marjory MacMurchy. This department naturally will have much to do with the scholarships for women and with all the educational work of the Association affecting women and women's organizations. Miss MacMurchy will also arrange with educational authorities for establishing scholarships to be awarded at matriculation for essays on the training of girls for skilled employment or on the economic importance of household buying. Household accounting and an understanding of the economics of buying alike from the standpoint of the home and of the nation are two aspects of the work of women which give the greatest promise for beneficial economic reconstruction. In connection with the scholarships to be awarded at Toronto, McGill and Winnipeg it is thought the subjects for investigation might include inspection in factories, food supply, opportunities for university women graduates in industrial life, the economic value of the work of the home, the relation between skilled training and wage earning, and what has come to be called welfare work on this continent. The object, indeed, will be to bring about the co-operation of women in solving Canadian economic problems and in stimulating interest in home-making and industrial employment. It may be added that the Association is also planning to assist in a national movement for vocational guidance in schools, and in this connection will offer the Provincial Departments of Education prizes for school children for essays on national industries or on the training of girls for skilled employment.

It is often asked why the Association concerns itself particularly with scientific and industrial research. The question is not hard to answer. The war is revolutionizing industry all over the world. It is clear that there will be a strong and organized effort by many countries to secure markets which Germany possessed before the war, to have an effective

partnership in the rebuilding of Europe and to enlarge the volume of our export trade. Take, for example, the position of Canada. When peace comes the United States will have a great commercial fleet such as probably the American people would not have developed in half a century of peace. They will have great organizations devoted to the sale of American manufactures in foreign markets. American industries having become efficient enough to dominate the domestic market, naturally turn to outside markets. The era of domestic trade in the neighboring country is being succeeded by the era of export trade. What is true of the United States is also true of Japan, and both of these nations are among the most formidable rivals of Canada. It is hardly necessary to say that the more thoroughly American and Japanese industries are organized and the more fully they control the home market, the more powerful they will be as competitors in Canadian markets. Hence, if these and other countries are creating great export organizations, buttressed with liberal Government support, if they are to have the sympathetic co-operation of American and Japanese banks, and if they are to have organization for shipping and selling abroad, Canada must show equal activity and equal resource if we are to hold our own, to say nothing of improving our position. We must know the character and extent of our natural resources. We must know how our raw materials can be produced most cheaply and manufactured most scientifically, and how the finished articles can be marketed most advantageously. For these things research, organization, co-operation and Government assistance are essential. Moreover, we will get the best economic and national results from developing industries which are the natural complement of Canadian natural resources as we will get the best return from these resources if they are handled scientifically and if labor and capital co-operate, not to limit production, but to produce to the utmost. The world is learning as never before that where labor produces the most and where labor and capital act together in harmony the best results are secured alike for labor and capital, and the best standards of civilization are maintained, not for the few, but for the masses of the people. It is for these and similar reasons that the Canadian Industrial Reconstruction Association attaches very great importance to post-graduate research faculties in Canadian Universities and to adequate organization for the sale of Canadian manufactures in foreign markets.



Three Ships being built simultaneously by the Western Canada Shipyards, Limited, Vancouver

Industrial Warfare

What the Intelligence Department is to the War Office a Cost System Can Be to the Manufacturer

The Fourth Instalment of a Series of Successful Attacks on Ever Rising Costs

By ROBERT ARKELL

Of Thorne, Mulholland, Howson & Macpherson, Industrial Advisors, Toronto

SOME time ago a special committee of the National Machine Tool Builders' Association reported that "Machine tool manufacturers making similar and competitive machine tools discovered among themselves ruinous and unprofitable competition, based, presumably, on actual costs. Comparison showed, however, that even where there were fair cost system methods, important and appreciably large elements were treated by different manufacturers in different ways." Unfortunately this condition is not peculiar to any one line of industry. It is only a month since a prominent manufacturer was heard to complain that one of his competitors was selling several lines at only a fraction over factory cost; and it was learned that the cut-rate manufacturer's reason for so doing was his belief that as his salesmen were under "straight salary" contracts and his administrative expenses were more or less "fixed," that the small margin, over factory cost, at which he was selling these goods was sufficient to pay his salesmen's extra travelling expenses and still leave him a respectable profit on the additional turnover. The truth was that this generous manufacturer based selling and administrative expenses on his *total* sales, and then cut his gross profit until the burden fell on only *half* of his business. Is it any wonder, then, that his company cannot pay dividends, despite the fact that his plant does not know what it is to be slack?

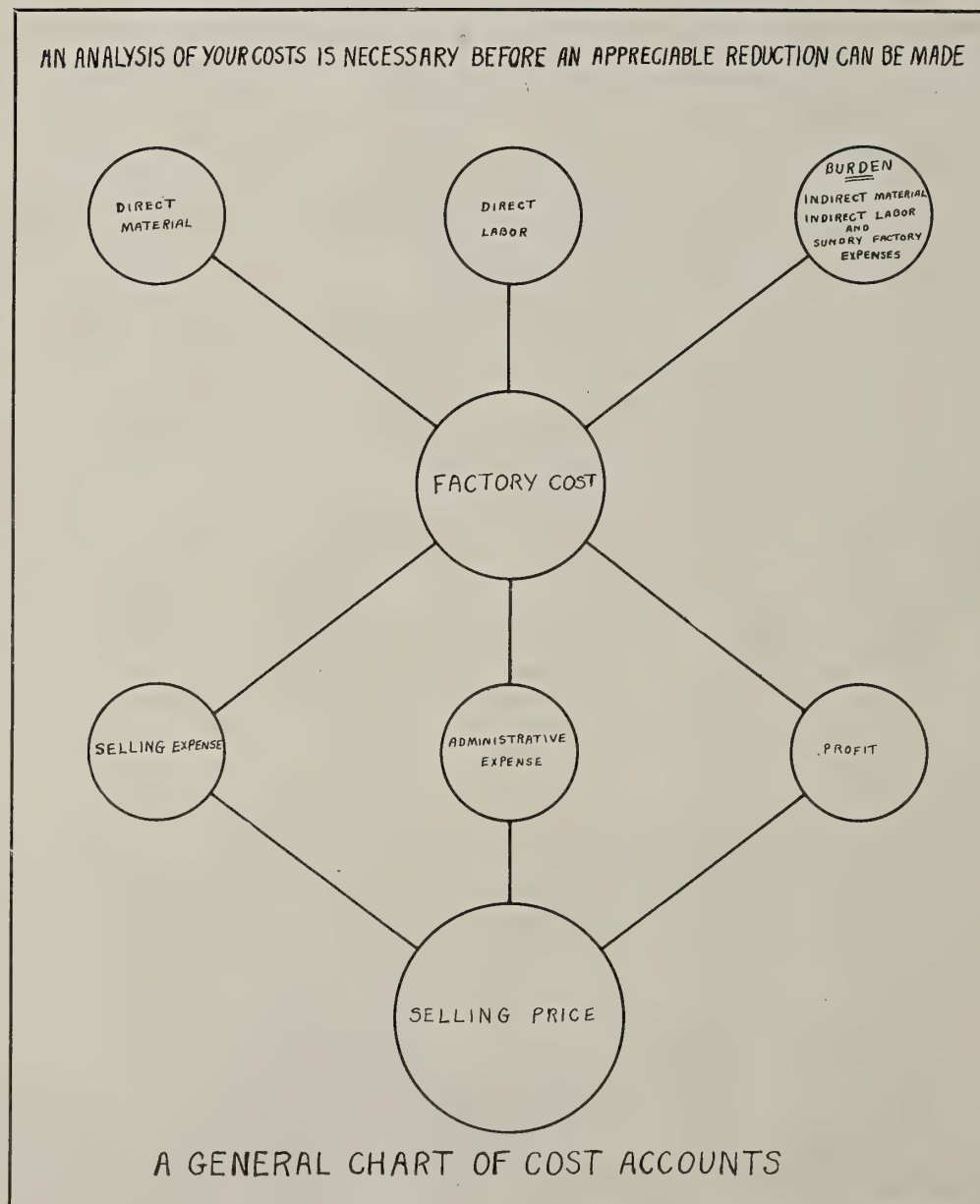
Supposing your gross profit is 50 per cent. on your factory

cost (which is equal to $33\frac{1}{3}$ per cent. of the selling price) and that your commercial overhead (that is, your selling and administration expenses) amounted to 25 per cent. of your annual sales. Do you realize that if only 10 per cent. of your sales is sold at factory cost that your net profits will drop

40 per cent.? To prove it let us take round figures. Say \$100,000 represents your sales. Then, if every article is sold at the regular price, you will receive $8\frac{1}{2}$ per cent. (gross profit of $33\frac{1}{3}$ per cent., less selling and administration expense of 25 per cent.), or \$8,333 net profit. But if \$10,000 of this \$100,000 is sold at factory cost, then all you receive is $33\frac{1}{3}$ per cent. of \$90,000, or \$30,000 less \$25,000 (because your commercial overhead is 25 per cent. of the \$100,000), or only \$5,000 net profit.

Costs are treated far too lightly by our manufacturers. It is safe to say that, apart from the necessity of fixing a selling price, many would not bother even with an estimate of the cost of their different products. In a plant where only one article is made, such a condition

might find some excuse, because the manufacturer could check his profit or loss monthly with the assistance of a perpetual inventory and a simple wage payment system. But how many factories are there which do make only one product? How many of these possess a perpetual inventory? How many know exactly how they "stand" at the end of every month? To show the necessity of obtaining an accurate cost of every line manufactured it is only necessary to cite two



of many instances which have recently come to light. One plant had been in operation for nearly twenty years. During the first ten years of its existence only two lines were manufactured—a high-priced and a low-priced toilet preparation—and large profits were made by the company. During the next five years other lines were gradually added until twelve distinct products were leaving the shipping room. The sales were now over the two million dollar mark, and the company's name was a household word. But the management did not recognize the relationship between increased sales and decreased profits, and to-day it is in the receiver's hands. Had they operated a cost system they would have seen that the two original preparations were "carrying" all the others. The public recognized a bargain in their later brands and bought heavily, to the company's sorrow.

Some Defective Logic

The other plant manufactured a special line of hardware, the prices of which were practically fixed by a large competitor. The smaller manufacturer did not stop to question the fact that he might not be able to make money on these prices. It did not occur to him that exceptional buying power, the latest machinery, etc., gave his large competitor a distinct advantage. It was sufficient for him to know that another concern was prospering by selling their goods at these prices. To the reader it will appear sheer madness, but such logic is quite common among our manufacturers. Some watch their competitors closer than their own affairs. If a price is cut they do not ask if it is the result of a temporary shortage of cash which forced the competitor to hastily dispose of some of his stock. Nine times out of ten they cut the price still lower. It is on such manufacturers that the assignee waxes rich. They die "hard," but their death is certain.

It may be said that there are many successful firms who do not operate cost systems, but that does not alter the fact that they could have been a great deal more successful had they possessed a thorough knowledge of their business. The manufacturer who knows is bound to outdistance the manufacturer who only has a "pretty good idea" as to what is going on all around him. Why is it, then, that there is not a larger percentage of real cost systems in use? Can it be that the manufacturer does not like to be told that he is not making all the profit he can? Or is it because the average manufacturer, having graduated from the factory ranks, has a natural contempt for anything pertaining to the office? One sometimes hears a manufacturer state that there is too much red tape about a cost system, but upon investigation it can always be proven that such so-called cost systems were installed by an office man who knew little of the factory or shop, or by a man who knows more about the factory than he does about accounting. It is such combinations as these that result in an avalanche of detail which, sooner or later, lands in the furnace. The writer has known of attempts to weigh the glue used to hold the hammers of a piano action in position; yes, even of efforts to determine the quantity of ink used on each job by a fairly large printer. A cost man must be acquainted with your process of manufacture and have a thorough knowledge of the best accounting practice, for red tape is as bad for the office as it is for the factory or shop.

System Easily Visualized

Another manufacturer will describe a cost system as a condensed statistical history of his plant's operations—a dry-as-dust affair, in which he is not interested, as the "damage," if any, has been done before he knows of it; but if this line

of reasoning were followed in every walk of life many of our grandfathers' problems would have remained unsolved. If it were for no other reason than the moral effect it has on the factory, a cost system would pay for itself within a few months. Where the workmen, department heads and superintendent know that their work is being closely checked by the "boss," a far higher percentage of efficiency is easily discernible. This does not mean that the manager should "wade" through a maze of figures each month to see where his profit has been made or "dropped," or where his attention is required to effect a saving. The information required by the largest plant can be charted on a few sheets, so that the manager can visualize the situation at a glance. The leaks will stand out as if under a magnifying glass. You do not have to experiment to find where economies can be effected. A cost system, if properly installed and operated, will give you that complete control of your business which you have always desired.

It has been pointed out the kind of a man you require to secure the essential facts of your operations without unnecessary effort. It now remains to see that your office accounting records are arranged so that these facts will come before you automatically. Look at the chart which accompanies this article. Can you tell exactly the quantity and value of the different materials used from day to day and month to month? Do you know how much is on hand at any time without waiting for an inventory to be taken? To secure this information simply requires the making up of a requisition at the time the order is issued to the factory, and insisting upon the return of any surplus material when the order is completed by each department. If you expect your employees to be careful with your stock you must show them that you think sufficient of it to check their requirements.

The Question of Wages

Then there is the labor question. Are the wages, which you charge to the jobs, balanced with your payroll, or do you take a chance? Do you make any distinction between the wages of, say, a trucker and a bench hand? If you did you might find that you have quite a number of "handy" men about your plant who are doing little more than making a pretence at work. How does your payroll for the different classes of labor compare with a year ago? Are you sure the increase is all due to higher wages? Do not answer any of these questions offhand? More than one manager has saved his salary by trying to prove what he thought he knew.

The overhead, you will notice, is under two headings, "factory overhead" and "commercial overhead," with two divisions of the latter. In a preceding paragraph it was shown why this is absolutely necessary. When all the overhead is grouped under one heading there is a grave danger that unfair competition would lead you to sell at a loss.

To quote again the special committee appointed by the National Machine Tool Builders' Association: "The day will come when no manufacturer can have a permanent and growing success without a complete and accurate cost system. And such a system will be as essential in the business of manufacture as a good superintendent, a good organizer and good workmen." That day is *to-day*.

Having in mind the keen competition of post war business, the next article will be devoted to Sales Development.

Some Phases of Canada's Housing Problem

The Shortage of Houses in Our Industrial Centres is Not Primarily a War-Time Development and the Solution of the Present Problem Can be Reached by the Construction of Permanent Dwellings Only—What has been Accomplished in Great Britain, United States and Canada

By EDWARD W. REYNOLDS

Illustrations by courtesy of the Commission of Conservation

MUCH is being said, but comparatively few practical suggestions are being offered, regarding the need of an early solution of Canada's housing problem. The mistaken impression prevails that the shortage of houses is a direct war development, while the contention that all that is required is a temporary solution until war conditions pass off, seems to be generally accepted.

In the first place, the housing question is not a new one. It has engaged the attention of manufacturers for a number of years, and the houses erected in Toronto by the Toronto Housing Company represent the first step towards a permanent solution of the difficulty.

The shortage of houses and the absence of desirable working-class residential districts in industrial areas throughout the Dominion are conditions that are very well known. The war with its increased demands on the industries and its call for accelerated production entailing the employment of night and day shifts, has simply emphasized this question, and forced the authorities, as well as those directly interested, to make plans for immediate action.

This is why the solution should be a permanent one. More is demanded than merely the erection of shacks and bunk-houses in the vicinity of munition plants. There is an urgent call for the planning and laying out of well-defined and well-proportioned residential districts. Lever Brothers, of Port Sunlight; the Cadburys of Birmingham; the late Mr. Fels, who erected a garden city in Kent County, England, all adopted this viewpoint. They created model communities, the fame of which led housing enthusiasts to travel from all parts of the world to view them and get ideas from which they could work out their own plans. It may be argued that such developments are impossible during war time. To this it may be replied that no nation on earth is bearing greater war burdens than Great Britain. Yet Great Britain has built, since the war started, some of the finest and most up-to-date residential districts in Europe. Well's Hill, for example, is located almost within the sound of the guns on the western front. Great Britain has already settled the question of responsibility. The Imperial Government has accepted it, thereby creating a precedent which the Canadian Government might well follow.

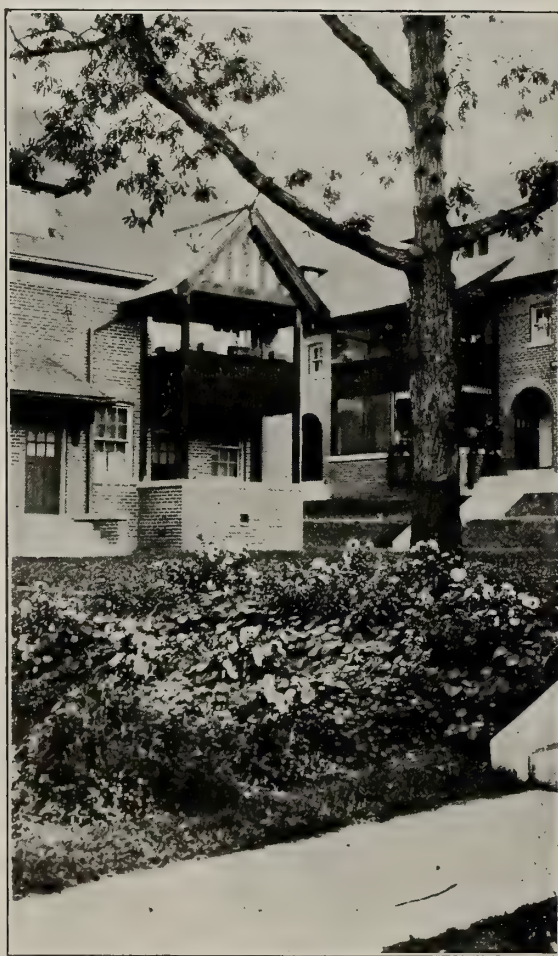
If post-bellum conditions are going to demand that the Canadian Government should consider "social legislation," the housing problem should be the first question considered. The Government should decide upon a policy of support, this support to be divided proportionately and equally among those directly interested. Each community, especially the industrial communities, should have its industrial or special housing committee. The plans should be broadly defined by

the Government acting on the advice of experts such as those engaged by the Conservation Commission. The committees should decide what they need; first the number of houses and stores, then the facilities for recreation and outdoor and indoor exercise.

Having discovered the cost, the Federal, Provincial and local authorities should decide on the apportionment of the bond guarantees, and arrangements be made for amortising the debt. Such a bonded indebtedness should be amortised for a period of thirty years, a shorter period making it somewhat difficult for those in charge to meet the annual charges.

Thomas Adams, the Conservation Commission's expert, addressing the National Housing Association of America in Philadelphia some time ago, very strongly urged the adoption of permanent plans, and said, "We want to spread our cities wider than they are. We want to give the people gardens and permanent homes. . . . Now you have an opportunity to solve the housing problem. Bad housing is undermining the health of the citizens of our big cities; and even some parts of your rural districts suffer from the neglect of this problem, partly owing to your over-estimate of the value of liberty and your under-estimate of

the value of life. . . . Take a large view of this question. Establish these new communities upon a permanent basis. Create garden cities now, because you have an opportunity you never had before. Recognize that in this country you are increasing your population twenty or twenty-five millions every fifteen years, and that, even if you build houses with one hundred or two hundred million dollars of Government money, you can only build one-sixth of the yearly demand for new homes in this country and therefore need have no fear of the danger of having excessive supply after the war." Those who think of the danger of a surplusage of housing



The Oaks, Riverdale Courts, Bain Avenue, Toronto Housing Co.

facilities in Canada through construction on a large scale, need only investigate the experiences of other countries when it will be found that the demand has never been supplied. There is much work to be done in Canada. The many slum districts in the bigger cities should be replaced by properly - built, and properly-planned apartment or other kinds of residential buildings, while there is an urgent call for the creation of new garden communities everywhere.

People who look for concrete examples on this side of the Atlantic have no farther to go than Bridgeport, Connecticut. Mr. William H. Ham, of the Bridgeport Housing Company, also discussing this question before the National Housing Association of America, gave the public a graphic idea of what the housing problem means, and what must be done to solve it.

He pointed out that the Remington Arms Company had spent \$3,000,000 on permanent homes, while the Housing Company itself had built permanent houses to the extent of \$1,000,000. "We are prepared to spend a large amount more as soon as Congress passes the proper legislation," said he. "All the houses at Bridgeport have been designed by architects. The United States will, without doubt, in the next few months stamp the character of the working man's home for the next hundred years. If it is to be made with a scroll saw I do not want to live a hundred years. If it is going to have Hamburg edging on the roof I do not want to live a hundred years. I remember, during the period I have observed buildings, three distinct types which have all passed out. . . I want to see buildings erected that will stand the test of the best architects' criticism."

The Bridgeport Housing Company has a membership embracing fifteen manufacturers, three public service corporations and several individuals. Mr. Ham pointed out that the company is going to pay a dividend eventually, even if the buildings are erected under the highest-priced conditions ever known. "Why?" said he. "Because we are going to amortise these buildings over a long period."

Regarding the style of house Mr. Ham said: "As the Government is going to set a style for the next hundred years,



Fourth Avenue, Pointe-aux-Trembles, near Montreal

Houses on the left were first erected, while those on the right were more recently completed

of the brick than if the same house was built of wood and clapboard. A slate roof on a six-room house costs from \$50 to \$60 more than a roof with shingles, and it is worth the difference. Most of the fixed items entering into the construction of the house are permanent, as, for instance, bathroom fixtures and plumbing, furnaces, plastered walls, chimney, floors. I emphasize these because the difference between a house that is permanent and a house that is not permanent on the basis of six rooms and a bath is very little indeed, and probably under \$500 per unit."

Of the varieties of housing schemes adopted in Canada—and they are yet only in their initial stages—the work of the Toronto Housing Company, that of the Riordon Pulp and Paper Company on the Upper Ottawa, and the housing scheme at Pointe-aux-Trembles, give good examples of the different varieties of work. The Toronto Housing Company devoted its attention to the building of courts for city dwellers, and so far they have proved a success. They are picturesque buildings, pleasantly located near the Don Flats.

The work of the Riordon Pulp and Paper Company is totally different. With its pulp mills in the virgin forests, some adequate means of living must of necessity be provided for the employees. One of the sad features of many of the industrial centres that dot the mining and other districts of Northern Ontario is the ungainly, even disreputable, resi-

dential areas around the plants. The early days of Cobalt are still fresh in the minds of the people; disease accentuated the discomforts of the mining camp during its formative period. The town of Timmins, the centre of the gold camp, is perhaps the best example of a serious attempt at placing the advantages of civilization at the disposal of those who help to exploit Canada's natural resources; yet this is far from perfect.

But the new town on the Upper Ottawa



A Narrow Street in Well Hall, Woolwich

This street is wide enough for air space—about 30 feet—and the saving in land and cost of construction as compared with a wide street enables the houses to be provided of good quality at low rent



Gretna—Two pairs of charming family cottages for more highly paid workmen



Workingmen's Homes in English Garden Suburb



Fourth Ave., Pointe-aux-Trembles

Note the encouragement to tenants to keep the gardens in good order by having them handed over in the condition shown in the picture when the houses are first occupied

will not be permitted to "just grow" through the medium of the workers, who would be required to erect mere shacks in their spare time. Under the advice of the Conservation Commission the plan will be carried out on up-to-date and scientific lines. In mapping out this city a contour map, showing the levels of the site, was first prepared, and the streets were then laid out so as to secure easy grades, directness of route and absence of sudden deflections. This was done to eliminate heavy grades on the streets. Before any buildings were erected the line of each street was blazed through the forest, so as to fix the best street locations and to secure the best aspects for dwellings. Areas are being set aside for open spaces, social centres, churches, schools, etc., in advance. The main approach to the town will be by a street eighty feet in width, passing through a square on which the stores and public buildings will be erected.

A Model Town

It is proposed to make the town a model of its kind, as it is recognized by the promoters that healthy and agreeable housing and social conditions are of vital importance in securing efficiency of the workers, and that large employers of labor have a direct responsibility in providing proper living conditions for their workers in such localities.

The Pointe-aux-Trembles scheme is more or less the development of a suburban area on lines that give the worker a chance or opportunity of living in semi-rural comfort near or within ready access of his employment. These houses are erected in comparatively open country, where land is cheap, but where the street railway renders a service. The scheme embraces the development of a great part of the district, and a considerable portion has been set off as a factory or industrial district. This will not be mixed up with the residential districts indiscriminately. The houses are permanent structures, the gardens were planned and laid out before the houses were occupied. The scheme affords a valuable object-lesson to the whole of Canada.

In Britain

While housing developments in Great Britain are not particularly well known to Canadians, nevertheless this work has reached a very efficient stage over there, and some remarkable developments have taken place. The village of Gretna, Scotland, is a striking example. This town is the outcome of war work in Great Britain, where the Imperial Ministry of Munitions is responsible for the nucleus of what is now one of the largest national housing schemes in the world.

The site for the village of Gretna was selected in 1915, about seven or eight months after war broke out. The land was devoted to agricultural pursuits until it was

acquired for building purposes. Since then the district has been so developed that about 15,000 people are being adequately housed. Altogether quarters have been provided for 550 families in cottages; 85 hotels find accommodation for 6,200 workers, and 134 bungalows house 1,300 more. In the central kitchen some 17,000 meals are provided each day. In two years the whole community has been developed into a permanent town of great importance.

Duty of the State

This is purely a development of war work, and shows what strides have been made; but this is not the sum total of Britain's housing plans—it is only a phase. Britain is interested in the proper housing of all people engaged in industry and commerce, whether highly paid officials or lower paid artisans.

And Canada, too, must become interested in a permanent policy of housing the people. The war has proved that it is a responsibility of the State. The employer of labor acknowledges his responsibility and is ready to do his share. The Provincial Government of Ontario has already set the pace for the co-operation of Provincial Governments. As was stated in the Executive Committee's report at the recent convention of the Canadian Manufacturers Association at Montreal, "These are matters for the Governments of Canada to consider. In Great Britain it has long since been recognized that the Government of a country has a distinct responsibility in regard to the housing conditions of the people apart from those engaged in war industries."

The money invested in other countries has been used to carry out schemes and to meet needs no greater than those which must be met in Canada.

In Toronto the city architect has been preparing plans for a standard five-room detached or semi-detached house that can be put up at a cost not exceeding \$2,500. The building has a frontage of 17½ feet and is 28 feet deep, with a basement the full area of the ground floor, and containing a furnace. The basement and first floor walls are of brick, and the upper story of frame covered with shingles. The ground floor, as designed, contains a living-room and kitchen, with porches on the front and rear. Upstairs there is provision for three bedrooms, with a three-piece bathroom. The bedrooms are 7 x 13½ feet, 9 x 10 feet, and 10 x 11 feet in size.



Gretna—Five-roomed Workmen's Cottages on Curved Road

Note simple pavement and absence of fencing: Uniformity of the main structures permits of economy, but variety is obtained by different treatment of doors and windows



The Lindens, Riverdale Courts, Bain Ave., Toronto Housing Co.
Group of Cottage Flats around recreation ground



Government Housing Scheme, Well Hall, Woolwich, 1915
View in Gilborne Way looking west

Note narrow, cheap street and utilization of space between street and garden as a children's playground free from danger

Great Britain's Plans for Post-War Trade

Already Post-War Plans Are Well Developed—The British Government is Assisting the British Trade Corporation—The Plans to Get Canadian Trade—The Federation of British Industries—The Cartel System in Great Britain—Some Minor Trade Agencies

By JOHN C. KIRKWOOD

B RITISH manufacturers are wide awake and organized for post-war foreign trade—this in spite of war's uncertainties and checks. And behind the manufacturers of Great Britain is the British Government. It is recognized that with the coming of peace there will not only be a great rush to get the orders that will await solicitation, but also a great necessity. Trade must pay the costs of war in very large measure, and must likewise be relied on to restore prosperity and relieve the heavy taxation that war has imposed on all classes. Also, trade is the lifeblood of private enterprise, and manufacturers must, in their own behalf, strive with might and main to get profitable orders—this in continuous flow.

While it is true that the markets of the world will be promptly absorbent of practically everything offered, it is also true that there will be great competition. The United States will prove a formidable competitor of Great Britain—perhaps her greatest competitor—and it may even be that the British manufacturer will have to meet the dangerous competition of Germany. In any event, the getting of business by British manufacturers in desired volume will have relation to British initiative. Ability to supply needed goods will count; so, too, will prices; so, too, will the good name for quality which goods of British manufacture possess; but salesmanship will also count, and the British manufacturer and the British Government know and appreciate this, and so, both separately and jointly, they are working to ensure that the foreign trade of Britain shall flourish and remain when peace returns.

In what follows some account is given of how Great Britain is prepared and preparing for post-war trade.

The British Trade Corporation

Among the foremost agencies for the promotion of foreign trade is the organization known as the British Trade Corporation. This corporation operates under a royal charter. Its powers, briefly set forth, are as follows:

- (a) To act as agents for governments or authorities, bankers, manufacturers, shippers.
- (b) To carry on business as contractors, merchants or traders.
- (c) To promote or finance or assist in the promotion or financing of businesses and undertakings of any description.
- (d) To enter into partnership or other arrangements for sharing profits.
- (e) To acquire and hold or dispose of shares, stock, bonds, etc.
- (f) To acquire and hold or dispose of any interest in any railways, tramways, ships, canals, docks, harbors, armament works, shipbuilding establishments, irrigation works, electrical works, gas works, waterworks, and in addition business of any description.
- (g) To acquire and hold any interest in and to develop natural resources in any part of the world.
- (h) To undertake and execute any trusts.
- (i) To obtain, work or dispose of any concessions, charters, or other legislative rights, monopolies, licenses, patents, etc.
- (j) To establish and maintain information and investigation bureaux, and to collect statistics, etc.

These are immensely wide powers, and of classes possessed by no ordinary banking institution.

The British Trade Corporation works sympathetically with the British Government. Its initial capital was £10,000,000. The Corporation has the practical alliance of British joint stock banks, as evidenced by their subscriptions to its capital stock.

A Department of Reconstruction

As a further means of helping British industry to develop in both home and foreign markets, the British Government has established a Department of Reconstruction, with a minister of Cabinet rank. This minister is Dr. Addison. His Department takes in phases of reconstruction other than those of trade, but it includes trade, and in the Department British manufacturers have a new and added source of strength in their plans to re-establish their industries where these have been disturbed and disorganized by war demands, and to recover trade both at home and abroad.

The Government Assists Science and Industry

The British Government has a Department of Science and Industry, supported by a grant of £1,000,000 for research work during the next five years. This department is a recognition of the great importance of the application of science to the inception and development of industries, and is at the same time a confession of past blindness. In this department, which has the full approval of the British Labor Party, we have a fresh expression of the new concept in Britain, namely, that the State must ally itself to industry in practical and extensive ways.

What Great Britain is Doing in Canada

How the British Government is aiding British manufacturers to secure foreign business is indicated by her reorganized consular system. Before war many of Britain's consuls were non-British, and in that fact lies a scandal of administration. The new system looks forward to the appointment of sixteen purely British trade consuls or commissioners, who will be resident in the principal British colonies, and in friendly non-British countries with which Britain hopes to build up trade.

In Canada there will be three—perhaps four—of these trade commissioners. One is already at work—Fred W. Field, whose territory is Ontario. Another, G. T. Milne, who comes to Canada from Australia, will be settled in Montreal. His territory will be Quebec, the Maritime Provinces and Newfoundland. Another will be located at Winnipeg, and in later time, it is probable that a fourth will be settled at Vancouver.

The functions of these trade commissioners are many. They will consist of keeping in close touch with governments and government departments to get all information and assistance possible; of visiting the various industrial centres in their territories to obtain useful information; of studying tariffs, legislation and patent regulations pertinent to the interests of British exporting firms; of reporting on trade opportunities, and orders and contracts likely to be placed for equipment; of communicating news of contracts and openings for new business; of making a complete annual report, and of serving individual British firms and British

trade associations as assistance may be sought. In all this there is a big work of first-class importance planned. As showing how the British manufacturers are taking advantage of the service which these trade commissioners are rendering may be cited the case of the commissioner to South Africa, recently in England. This trade representative had 660 firms apply to him for special interviews, and over 100 firms invited him to visit their plants. In addition, this trade commissioner had numerous invitations to address Boards of Trade, Chambers of Commerce, and other bodies of business men, to inform them of trade opportunities and requirements in the South African market.

The Federation of British Industries

A British trade organization of magnitude is the Federation of British Industries. The composition of the Federation is made up of many hundreds of the foremost British firms doing business overseas, including a large number of trade associations. For example, the Federation includes in its membership such notable firms as Sir W. G. Armstrong, Whitworth & Co., shipbuilders and manufacturers of guns and ammunition; Sir William Arrol & Co., bridge builders and manufacturers of hydraulic machinery; The Bradford Dyers' Association; The British Westinghouse Electric & Manufacturing Co.; Crosse & Blackwell; John Dickenson & Co., paper makers; Furness, Withy & Co., steamship owners; Lever Bros., soap manufacturers; R. A. Lister & Co., manufacturers of agricultural machinery; Kerr, Stuart & Co., locomotive engine builders; John Lysaght, ironmasters; Milward & Sons, manufacturers of sewing needles and fishing tackle; Nobel's Explosives Co.; Wolseley Motors. These are indicative of the class and standing of the firms affiliated with the Federation.

Among representative trade associations in the membership are The Associated British Machine Tool Makers; British Manufacturers Association; Cotton Spinners' and Manufacturers Association; Locomotive Manufacturers Parliamentary Association; Scottish Steel Makers' Association; Silk Association of Great Britain and Ireland; Wagon Repairs Association; Machine Tool & Engineering Association; Midland Master Hosiery, Bleachers', Dyers' and Finishers' Federation.

In the aggregate the membership is representative of many thousands of British manufacturers. These have become federated for common objects, and the resulting union, The Federation of British Industries, has the favor and practical alliance of the British Government. The capital represented by the firms constituting the membership is easily £3,000,000,000. Each firm or association contributes an annual fee for the upkeep of the Federation and to enable it to carry on its propaganda work. The Federation has offices in London at 39 St. James's Street, S.W., and is highly organized, being made up of various departments and committees. It has district representatives in various commercial centres of the British Isles. It has a president, F. Dudley Docker, C.B., and an Executive Council, of which the chairman is Sir William B. Peat. On this committee are many men of distinction—for example, Sir Vincent Caillard, of Vickers Limited; Sir Richard Cooper, Bart., M.P.; Sir Kenneth Crossley, Bart.; Godfrey C. Isaacs; W. Peter Rylands, Ryland Bros.; J. E. Thorneycroft, the British Engineers Association; The Right Honorable Sir George H. Murray, G.C.B., I.S.O., of Sir W. G. Armstrong, Whitworth & Co.; Sir Joseph Lawrence, of Linotype & Machinery, Limited.

One of the objects of the Federation is to give the various trades an opportunity to have their opinion or voice concerted. For example, the lace trade, the hosiery trade, the motor trade, the shipbuilding trade, the machine tool trade, the colliery trade, the electrical trade, and so on, have an opportunity in the Federation of British Industries to make

their opinions articulate in the councils of the Federation—this for the harmonizing and unifying of opinion, and for mutual benefit generally. Also, through the Federation the various organized trades have unification for the prosecution and development of common objectives.

An Overseas Trade and Consular Committee

An important and very active section of the Federation is its Overseas Trade and Consular Committee. This committee has an Intelligence Department which is concerned with the procuring, and dissemination to members, of information relating to foreign trade opportunities, organizations and facilities. This committee has charge of the Federation's publicity work at home and abroad, and is performing a service of peculiar value for members. It is an extremely active committee, gathering a vast amount of pertinent information of a most varied character, and is in intimate touch with British and other consuls and trade officials and departments in all parts of the world. It is the eyes, so to speak, and the ears, of the Federation, and assembles and distributes an amount and kind of information of first-class importance to British foreign trading forms.

This committee issues to members a weekly bulletin which is most intelligently prepared. Its scope is indicated by the following contents of a few of these bulletins: U. S. A. troops—significance to British trade; Harvest of the sea—our fisheries; Our fishing industry—present and future (illustrated with excellent maps); Automobile Markets—report of U. S. A. Association of Manufacturers; Germany—Organizing chemical industries for peace; The Hookworm—its relation to tropical inefficiency; The Literature of Commerce—Textile Factories; Margarine from Train Oil; Concrete Ships; Increased Metal Production; Artificial Nitrogenous Fertilizers in Germany; The Business Man and the Army; German Traders on Transition Problems; The Inflation of Credit; Construction Materials and Machinery in Cuba; Rebuilding Germany's Merchant Fleet; Holland's International Trade Exhibition (to be held after peace); Trade of British Malaya; American International Corporation; Decimal Coinage; The Germans in China; Brown Coal Deposits in Australia; Arterial Roads in Great Britain. These contents show how well served British manufacturers are by the Bulletin prepared by the Intelligence Department of the Overseas Trade and Consular Committee.

Some other committees of the Federation are The Directors' Committee, The Education Committee, Excess Profits Committee, A Committee on Government Services, Organization and Management Committee.

Work With The Government

The connection of the Federation with the British Government is chiefly with the Foreign Trade Department of the Foreign Office, and has been largely in relation to "Form K" which gives a list of the enemy firms with which British traders are forbidden to do business. This Form "K" is constantly being revised, and it is important to British manufacturers that they be kept well advised concerning the firms they may not do business with. The distribution of all Foreign Office Commercial Information Reports is subject to the prior approval by the Foreign Office of the firms or individuals applying for them; hence the organization of the Federation of British Industries is of real service to the Foreign Office in governing and distributing Form "K" reports. These Form "K" reports are compiled in the countries to which they apply and their preparation is really laborious and calls for infinite care. Often these Form "K" reports are accompanied by very interesting consular notes which are sometimes very full and for every branch of trade.

Through the Federation of British Industries the Foreign Trade Department of the Foreign Office of the British Government has an intimate contact with British trade at home and abroad, and has an ally at once most useful and extremely energetic and ready to further Government plans and purposes. It is certain that the State—in other words, the British Government—will be identified for the future with trade and traders as never before. This is a practical necessity. Germany has shown the world how the alliance of the State and industry can be made effective to promote national and business interests, and the lesson and example of Germany are proving profitable to other countries wrestling with the tremendous problem of how to capture and hold trade in the days following peace.

The British Empire Producers Association

In Great Britain is another federation of manufacturers and trade associations, namely, the British Empire Producers Association. As its name implies, its objects and scope are imperial rather than domestic, and so any extended examination of this organization is alien to the present purpose, which is to tell something of what British manufacturers are doing and planning to secure foreign trade. At the same time, as an indication of how British manufacturers are alert to the present importance of trade organization, and of how they are associating themselves to assure plentiful business for Great Britain, this Empire Trade Association merits mention. This Association has one Canadian member, the Canadian Manufacturers Association, but it does not seem to have developed its activities and organization equally with the Federation of British Industries.

The Cartel Idea in Great Britain

The cartel or syndicate idea had taken firm root in Great Britain even before the outbreak of war. The cartel idea is the federation of the selling—and sometimes the buying—departments of many of the same general class. These associations federate themselves, in many cases, for other objects than selling; matters of policy, output, shipping arrangements, areas of individual selling, the procuring of raw materials, legislation—these are comprehended within the scope of the associations' fields of interest.

While the free combination of firms in Great Britain is limited by legislation, yet a fair amount of liberty is permitted, and important combinations have been formed. For example, the great majority of the firms engaged in the production, shipping and marketing of coal are joined together in a powerful organization, and one consequence of this merging of common interests and objects is that British coal producers have secured a masterful grip of the rich South American market. Other British combinations of like kind are those of the cement makers, makers of electrical equipment, cotton and textile products, wallpaper, tobacco, pottery, iron and steel. Recently a number of makers of machinery have been joined, for marketing purposes, in the Representation for British Manufacturers, Limited. This trade organization will handle the business of the associated firms in certain important foreign markets, and will carry on a selling propaganda to increase the demand for the products made by the firms represented.

Other trade associations which have been formed for the promotion of mutual objects and to eliminate competition in selling are The Scottish Steel Makers' Association and the North of England Makers, engaged in the manufacture of steel plates. These two associations divide the territory and fix prices. Other similar organizations are The National Gal-

vanized Steel Makers Association, The Tin-Plate Bar Combine, and The South Wales Siemens Steel Makers Association. The extent and importance of such combinations among the makers of ship and boiler plate, galvanized plates, tin-plate bars and rails are indicated by their output which totals over three and a half million tons per annum. In all this combining England has adopted the trade methods of her great European rival—Germany.

Some Minor Trade Developers

Not all the activity to build up foreign trade is confined to the manufacturers and the British Government. Many private firms and individuals are busy with schemes and proposals of varying merit designed to help the British manufacturer secure foreign business. Some of these schemes and proposals take the form of trade directories, special export issues of trade papers, year books, cinematograph films of industries and plants for exhibition all over the world (at a cost of £1,000 per firm or film), and so on. One interesting organization plans to establish agents abroad, and to have exhibition warehouses or show rooms, and to carry on a publicity campaign in each country to attract buyers to visit the assembly of exhibits and to place orders.

War Has Halted Development Work

The plans and the activities of some of the organizations have been disturbed by the adverse war situation brought about by the disaster in Italy and the collapse of Russia. Until the war situation improves, there is a natural reluctance to be fully active in organization work. Also, work has been halted by the Man Power Bill of Great Britain, which has drafted many men, and many important executives, into the national service. But these checks are but temporary.

The Lesson for Canada

When one reads and learns what Great Britain is doing that her foreign trade may be assured and built up when peace comes, one is conscious that we in Canada have not fully awakened to what we should be doing for like objects. We have done something, and are attempting larger things, but the fact remains that organization for trade after war is not receiving the attention which the matter deserves either from our Government or our manufacturers. When it is borne in mind that foreign trade must be relied on heavily to pay our war debts and adverse trade balances, it is seen that we have a real and substantial stake in world markets. But apart from this necessity is the economic wisdom of maintaining the large place which our country has won in foreign markets. The time to be busy for organization is now, and even though our manufacturers and business men and Government and all others who should be concerned about our foreign trade, are up to their eyes in work, yet the call to them to give time and thought to a matter of vital importance and of ever growing importance is both loud and insistent, and must be heeded. The longer that we delay responding to this call, the greater will be our handicaps and losses when we do turn our thought and energies to the subject of retaining and protecting our foreign trade. It is only by having our attention directed to this all-important business that we are likely to be roused to action, and it is to catch the attention and to inform the mind that this contribution about Great Britain's preparations and plans and accomplishments for securing her foreign trade has been written.

Women Workers at a Canadian Aviation Camp



Placing Cleats and Varnishing Wings

UNDER the official designation of "civilian subordinates," women workers were admitted in July this year, for the first time, to the Royal Air Force in Canada. In England, where the employment of women in airplane construction passed the experimental stage some time ago, the workers are duly enlisted. The force in Canada does not intimate any intention of following in the steps of England. They are content to let things remain as they are just now, but a casual observer receives the impression that the experiment is receiving the keenest attention.

There are approximately 450 women employed by the R.A.F. in Canada. At Leaside Camp, Toronto, where the accompanying illustrations were obtained, there were 85 at the end of July. The women are employed in the tech-

nical stores, repair shop, garage and various parts of construction. The schedule of wages for workers in all trades is from \$13 to \$17 per week; motor drivers receive \$10 to \$12 and as any worker makes good and qualifies for a superintendent's post, the wage ranges from \$20 to \$30.

The women were taken because of the shortage of men, and the official opinion at Leaside is that the plan is working out successfully. The women themselves have voiced approval of the treatment accorded them and the painstaking tuition they are receiving. Working hours are from 8.30 a.m. to 12.15 with a 15-minute recess. Noon hour is from 12.15 to 2, and afternoon work from 2 to 5.30. There is a private canteen for the women and they are brought to work and returned to the car line in R.A.F. tenders.



Covering the Wings with Canvas

What an Ocean Delivery Service Signifies

While Written from the Standpoint of the United States' Producer and Exporter, and with a View to Stimulating Thought about America's New Merchant Marine, this Article by the Chairman of the United States Shipping Board Applies Quite as Emphatically to Canadian Conditions

By EDWARD N. HURLEY

AMERICAN business has the best delivery service in the world—for customers at home. The department store not only delivers a spool of thread to a remote suburb on schedule, but delivers it through an interlocking system of motor trucks, light vehicles, branch distributing stations and wagon routes, which speed up service and cut costs. The manufacturer and jobber reach their customers by flexible railroad service extending from the loaded freight car to the emergency express shipment to fill out missing stock numbers—and if these do not suffice they get closer to the customer with branches. This typical American delivery service has been extended to soil products, like California oranges, Colorado cantaloupes, northwestern red apples, Florida grapefruit, Georgia peaches. By means of the refrigerator car and modern grading and packages, new trade has been built by serving new customers in new ways.

But all this delivery development is for our home trade. No country in the world hauls a ton of freight on the railroads as cheaply as we do. No country in the world has linked up such vast territory as ours on a modern delivery basis. Almost anything we raise or manufacture anywhere in the United States can be hauled profitably, quickly, right side up, in good order—at home. We are not daunted by distance, bulk, expense, or difficulties. If one delivery method won't work, we invent another.

But always for ourselves.

When we have prime American products to deliver to a foreign customer, it has been our practice thus far to call in the rusty ocean tramp steamer, turn the job over to a foreigner and forget about it.

No Delivery System

Imagine a great factory or department store with no delivery system for its customers. When goods are packed, the shipping clerk steps to the door, whistles for any old expressman or teamster, and hands the goods over to him. That is what we have been doing in foreign trade. The more dilapidated the expressman's rig, and the cheaper his bid on the job, the better we thought it.

Meanwhile, the Briton and the German have been reaching some of the best trade in the world by the best ocean-delivery service. We started our jobbing teamster to South America with our goods and forgot all about him. He promised to get there as soon as he could. While he was on the road, the Briton and the German sped past him with fast delivery trucks of the latest type.

But the war is going to change all this. When we get done with our job of making the world safe for democracy, we will have 25,000,000 tons of merchant ships, or the equivalent of England's mercantile marine, which is the largest. Today, we are building ships for war. But each improvement in war shipping brings its corresponding improvement in merchant shipping. A year ago we would have been glad to get our hands on ships of any size or type, and our hopes were centred on a large fleet of wooden steamers of moderate capacity. Today, while still keeping all our wooden ship-

yards busy, we have increased the size to 5,000 tons, and now know that most of this wooden tonnage will be kept in coast-wise trade, releasing the steel ships for the war zone. Where we were glad to get steel ships of 5,000 to 7,000 tons a year ago, now we are building them in 8,000 and 10,000 ton types, and planning troop ships of 12,000 and 15,000 and even 20,000 tons, with speeds of 16 to 20 knots an hour.

Get Ships Into Our Thinking

It is none too early for the American business man to begin thinking of these ships in terms of modern delivery service to foreign customers. And not the business man alone, but the farmer, the consumer, the community—the whole American nation. We must get ships into our thinking, and planning, and work, just as we have got railroads into the American consciousness.

When the war ends there will be work for ships all over the world. Peace will soon make the British mercantile marine as strong as ever. The Norwegians and Japanese are building ships. The Germans will undoubtedly rebuild their mercantile marine. So it is possible to look ahead and see times coming when we must compete with these nations. And we shall never hold our own unless both our ships and our foreign trade are organized along the efficient delivery lines that facilitate business at home.

We must have ships running to all our customers in Latin America, the Pacific and Europe on regular delivery schedules. Germany had the greatest international department-store delivery system in the world before the war. See how her merchant marine was tied up in foreign harbors. The Hamburg-American line had in 1913 a total of 192 ships, and with these ships it covered 74 regular steamship routes. The North German Lloyd had 133 ships, and its regular routes covered practically the whole world. British shipping is on the same basis of regular routes and regular deliveries. We would not undertake to give service to customers at home without our fast freight lines, express facilities, and special cars for special goods. We can not hope to get close to foreign customers, and keep close, and give service, unless we organize our new ships to run on regular routes and embody the idea of regular service into the new foreign trade which we must build.

Regular service on regular steamship routes will be vitally necessary if we are to hold our own either in shipping or export trade.

Where Our Salvation Lies

The other day a steamship man in my office painted a somewhat gloomy picture of after-war shipping rivalry. Our war wages and higher costs would make it impossible to compete with British, Japanese, Norwegian and German ships, he feared.

"Suppose we run our ships on regular lines to all foreign countries where trade can be built," I suggested. "Suppose that instead of keeping the traffic on a basis of cheapness and irregular sailings, we extend our fast railroad freight

service to the ocean, and afford American business men the same facilities for reaching customers abroad. Suppose we also carry passengers on combination cargo and passenger ships, and make it easy for those customers to visit our markets, just as the southern and western merchants visit Chicago and New York. Would that overcome the disadvantages of cheap ocean competition?"

"That is our only salvation," was his reply.

It is not only our big opportunity for holding our own in shipping competition, but it is the only businesslike way to build up foreign trade. You may take past statistics of our foreign trade to different countries and see regular delivery service and export trade growing together. Because steamship service to Europe was on daily schedule we were able to deliver our goods to customers there as regularly as we sent them over the border to Canada by our railroad service. Because West Indian and Central American countries could be served by our coastwise ships on regular schedules we built lasting and growing trade with these neighboring nations. And on the same principle, because our steamship service to South America, Australia and the Orient was irregular, when it existed at all, and in the control of competitors reaching those countries by regular lines, our sales were spasmodic and unbalanced by return shipments of raw materials.

Now we are rapidly building the mechanical equipment for regular steamship lines all over the world. The fast troop ship can be converted for combined passenger and cargo

service and placed on regular lines, reaching the whole of Central America, South America, the Pacific, and the British Colonies. We shall undoubtedly have our own liners to Great Britain, European and Mediterranean ports. Our refrigerator ships, now carrying meat and dairy products to feed the allies, will carry meat, fruit, butter, eggs, and perishables to other countries. Our cargo ships can be organized on the triangular system, which has made British and German shipping profitable. That is, a British ship left Wales with a cargo of coal for South America, picked up a cargo of nitrates for the United States, and returned with a cargo of wheat to England. Thus British export and import trade were both facilitated, and on the third leg of the triangle the British ship did a delivery job for a foreign nation, thus adding to tonnage and revenue. If 25,000,000 tons of American shipping can be kept busy in our own export and import trade, then the development of this third leg in the triangle will keep 30,000,000 to 35,000,000 tons of American shipping employed. That is the tonnage which I estimate will be needed by the United States after the war.

To keep this great new merchant marine busy we must have a radical change in American business thinking. Every manufacturer and trader in the United States, every banker, farmer, miner and consumer must begin to think now about American merchant ships as a great modern international delivery service. No longer must we be content to let our railroads stop at the ocean—they must be extended to reach clear around the globe.

Mr. Just Speaks on Trade With Russia

The Canadian Trade Commissioner to Russia Addresses a Meeting of Manufacturers in Toronto and Outlines Plans Under Which a Successful Export Trade May be Built Up with that Country—Some of the Favorable and Unfavorable Features of the Scheme

MR. C. F. JUST, Canadian Trade Commissioner in Russia, having now returned to Canada, Sir George E. Foster suggested that he should be afforded an opportunity to communicate to the manufacturers certain information and to make proposals in regard to the development of Canadian trade with Russia, which the Minister and himself believed would be of interest to Canadian manufacturers, as bearing generally upon the preparations and organization that would seem to be called for in connection with Canada's export trade after the war.

In Position to Accept Business

A meeting was accordingly convened in the association's board room, on July 10th, of firms which, it was thought, would be interested in hearing what Mr. Just had to say. Mr. Just was accompanied by Mr. Robert S. Botsford, mining engineer, and Mr. W. G. Mitchell, engineer, representing Martens and Company, Inc., both of Petrograd, Russia.

Major L. L. Anthes, chairman of the Toronto Branch, Canadian Manufacturers Association, was called to the chair and introduced the visitors.

Mr. Just, in addressing the conference, stated that Canada was said to be a borrowing nation, and would continue to be a borrowing nation after the war. Against this we may place the record of Canadian advances to the Mother Country during the war. Competent financial authorities of weight advise us that there is no comparison between the resources and the standing of the industries of Canada before the war and now; that with the enlarged industrial equipment and trained labor Canada is in a position to accept and undertake all the legiti-

mate business which Russia or any other market can put in her way after the war.

The Allied Governments have recently restated their firm resolve to assist Russia to her feet—in other words, to re-equip herself by way of recovering her economic freedom. It was impossible to imagine this vast country to be so impoverished as not to be able to recover out of her realizable resources and her stores of material products. Chaotic as is the outlook, it seems clear that forces of resistance are slowly forming against Bolsheviki anarchy and German aggression. Part of Russia is under German control, but this tends rather to arouse a passive opposition, which will defeat the political and economic domination of Russia by Germany. Hitherto Germany financed all the transactions in Russia, money being supplied at ten per cent. on condition that goods were purchased in Germany. If we are going after this export business we must have a trade bank. The Canadian Government was anxious to know if the Canadian manufacturers are really interested.

Departmental Reports

The preliminary Report on Russian Trade, issued by the department, while necessarily incomplete, is a fairly satisfactory handbook on the character and scope of the Russian market. It is at the disposal of Canadians who have any desire to look into the question, and the subsequent reports from the trade commissioners have done little more than amplify the main conclusions therein laid down. The course of events in Russia during the last ten months is responsible for this. It is true, however, that these events have intensified many times the need of the Russian consumer, and as soon

as commercial intercourse is re-established there is hardly anything which Canadian manufacturers have available for delivery which would not find a ready sale in Russia for a long time.

Canadian Specialties Required *

In this connection certain "specialties" of Canada may be referred to which are so well adapted for Russian conditions and in the production of which Canada is vitally interested. They are:

- Agricultural machinery.
- Flour mill machinery.
- Road-making machinery.
- Mining specialties.
- Lumbering equipment and appliances.
- Sawmill machinery.
- Wood-working machinery.
- Pulp and paper mill equipment.
- Grain elevator equipment.
- Leather (chrome tannages).
- Chemicals.

The first necessity of Russia is that she be enabled to develop her natural resources of the soil, the forest and the mine. There is an extraordinary similarity between Russia and Canada in respect of climate and natural resources. Canadian methods and experience in developing Canada's resources are precisely those which fit the Russian position. Russians recognize this. They see the results that Canada has achieved with her small population, one-twentieth of that of Russia. They are naturally impressed and, with the national readiness characteristic of the Russian to adopt foreign ideas and methods where practicable, they look confidently to Canada. Canada also benefits by association in the popular mind with the United States.

How to Meet the Situation

The situation on Canada's side will call for strong organizations for production and sale of commodities, for concentration of effort in transportation and finance, far exceeding what has been done in the past, and the same processes will be necessary for the efficient conduct of an export trade with countries other than Russia.

Canada has had many mergers for achieving present economical production. Canada must be prepared for a further process of concentration and adaptation of effort in order to place her export trade upon a stronger and wider basis if the country's war scale production is to be maintained after peace is signed. To neglect this may easily spell disaster, or at least grave inconvenience. And the means for carrying out such a policy are available. They have been tested elsewhere and have not been found wanting. One of these is the development and application of the Cartel System to Canadian production and trading methods, viz., various forms of association between producers for regulating terms of payment, terms of sale, and samples, price cartels or agreements to control prices; association between producers for the production of a specified class of product, the regulation of the output and its apportionment among the participating firms; syndicate or sale cartels, the pooling of orders from a given market, etc. Further, by co-operation in the grouping of strong industries producing co-related but non-competitive articles which are complementary to each other, and which lend themselves to being handled by a single joint representation in a given foreign market, thus effecting considerable economies in sale and distribution, and securing unity of direction and control, and thereby efficiency of effort.

Transportation

The all-important question of transportation in the immediate future requires to be considered anew in its relation to Russian trade. In view of the conditions which may be ex-

pected to prevail in regard to shipping for some time after the war, the question of allotting tonnage to Canada for trade with Russia must be suitably and systematically provided for. Again, the provision of an all-British forwarding and clearing organization is a fundamental condition for success of British trade with Russia, in which Canada ought to participate, unless the creation of a separate Canadian concern is contemplated. Hitherto the organizations providing these services have been almost exclusively in German hands or under German financial control and direction. They have constituted a potent, if not the deciding, factor in the German commercial penetration of Russia. Organizations of this scope ensure the smooth working of trade relations with the Russian customer, who is relieved of all questions of exchange, freight and tiresome official regulations. Such an organization is capable also of becoming an invaluable and indispensable instrument for an efficient commercial enquiry and information service, a matter of supreme importance in a wide-flung country like Russia, with its special peculiarities of commercial credit.

An attempt to create such an all-British bank, following reports on the subject, was made in 1916. Unfortunately this attempt was defeated by the characteristic action of a leading Petrograd bank, under strong German influences and, it is suspected, with official Russian connivance.

It is interesting to recall that the proposed scheme was to include Canadian transportation interests, as well as corresponding Australian and Indian interests. The matter will undoubtedly be revived, and should be agitated in good time in Canada.

Finance

Apart from the ordinary credit operations and assistance which come within the limits of legitimate banking, Russia calls for financial accommodation and support in many ways calls for financial accommodation and support in ways must be met by expedients of another character.

It is suggested that the facilities which the British Trade Corporation are to extend to United Kingdom enterprises undertaking large operations in new markets find imitation in Canada by means of a corresponding *ad hoc* organization. A start of this character has already been made in regard to assisting Canadian-Italian trade, and a similar effort is required for Canadian trade with Russia. To successfully introduce the Canadian "specialties," to which reference has already been made, into Russia will involve financial arrangements of a serious character, owing to the scale of Russia's requirements, and in order to build up a permanent flow of orders of this character the establishment of a Canadian financial corporation in Russia would appear to be one of the best solutions of the problem. Bluntly the proposal is for Canada to lend money to approved Russian enterprises to pay Canadian manufacturers for the equipment and other things they are called upon to supply. A clear understanding in these matters would greatly simplify the consideration of new business of this character in Russia for our Canadian manufacturing interests.

Other Speakers

Mr. Botsford emphasized the opportunities presented in Russia for the sale of Canadian "specialties." Elevators of Canadian make are much required in Russia. If the Canadian manufacturer gets a market for any article he can keep his factory going all the time upon that article, such will be the large demand. We must be very careful to prevent information as to our manufactures going to Germany. If Germans must get our information, we should at least get theirs. Mr. Mitchell then addressed the meeting, explaining that his

(Continued on Page 144.)

Japanese Control of B.C. Fishing Industry

Japs Beat Indians at Their Own Game and Crowd Out the Whites—While Shipbuilding Firms Feverishly Turn Out Tonnage to Whip the U-Boats, the Little Brown Men Get a Tighter Grip on the Salmon Business—Picturesque Features of the Famous Industry

By E. W. J.

(From the "Vancouver Daily Sun")



Japanese Fishing Vessels on the Fraser River

BUT a few short years ago the only fishing boat to be seen on the Fraser River, on the Naas River, in Jervis Inlet or on the west coast of Vancouver Island, was the little Indian dug-out, or the flat-bottom rowboat, with stained sail and noisy detachable rudder.

The quiet of the evenings along the water's edge was broken by the rhythmical bump-bump-bump of the tarred-over cedar floats, as they were drawn in over the broad tail-board of the boat by the sturdy bronzed aboriginee, whose klooch was rowing the boat along and steering it with her oars to guide it slowly in horizontal line with the incoming net.

White Men Take Hold of Industry

Each cessation of the noise of the floats coming over the edge of the boat indicated a salmon and the people living along the shores could sit on their verandahs or dangle their feet from the wharves in front of the canneries and make an accurate estimate of the evening's catch, by counting the stops, or watching the flashing of the sides of a salmon, as it flapped around in the net being lifted over the sides of the fishing tubs.

As the canneries increased in numbers until the Fraser River alone boasted of thirty, the white men began to take to the fishing business and the writer has seen night after night, when two white men in a boat, would get enough fish to make \$800 in the drifts of eight hours.

Unlike the Indian, the white men were not satisfied to fish in primitive skiffs but sought a more sturdy vessel to buck the white caps at the mouth of the river, and the wavelets that were sometimes whipped up in the rivers many

miles inland. This progressive spirit caused the introduction of the round-bottomed, board-beam Columbia river fishing boat, a type of vessel that is still in use on the rivers and in the bays and gulfs along the coast of British Columbia.

The advent of the Columbia river boat did not, however, alter the style of fishing net which still remained 150 fathoms.

Settlers in the valleys along the coast rivers who procured boats for their own transportation, as coast service for passenger boats was of an intermittent nature, put these boats to use by fishing in the summer and allowing their wives and sons to tend the farms, and many of these farmers made as much in six weeks from their fishing operations as they would realize in a year from tilling the soil. In those days the sockeye salmon was the only fish that found a market, and as soon as the sockeye run was over, the fishing season was over.

When the Indians Fished

So remunerative was this short period to both Indians and whites that entire tribes would come from their winter reservations many miles inland and camp all along the Fraser river. In those days it was not an uncommon sight to see two or three thousand of these Indians tented along the Fraser river between what is now the city market and the junction of Columbia and Front streets in New Westminster with the present site of the Great Northern depot as the chief's camp.

This camp consisted of an extra tent that had a floor in it, and councils of war were held there. It was in this tent the chief would meet the committee from the annual sports

day and promise after much eclat to stage a whole day of Indian sports, canoe races, running races, archery or possibly a potlatch parade which meant that all the Indians, kloodches and papooses in war-paint would attempt a march, that usually wound up in a gigantic burst of laughter with the young people running behind the corners of the buildings and peeping out shyly and giggling, while the adults sat on the edge of the sidewalks utterly regardless of their new red, blue or yellow velvet gowns, and guttered to the committee in an endeavor to explain that they were not accustomed to the lock-step.

The arrivals of the Indians in the city was a signal for the merchants to display all the gaudy colored dresses and hats they could accumulate. It was no uncommon sight to see a kloodch in bare feet and faded calico dress enter one of the leading stores of the city, pick out a piece of gay red velvet, or plaid silk, take it out on the edge of the sidewalk, cut it into lengths suitable to her height, sew the lengths together, run a gathering string through the top and, without hemming it, put it on over the dirty wrapper she was already wearing, and the entire transformation take place within six feet of the store where she bought the goods.

Jacob's Coat Nothing Like This.

If the skirt pleased her she would pull the shawl around her shoulders, go back into the shop, pick out a cheap hat such as is worn in hay-making fields, pass along to the box of many colored flowers, pick out about three of the shades that clash the most, put them on the hat, and depart as thoroughly pleased with her appearance as if she had been gowned by Madame Paquin.

Later these women took to exchanging their reed and grass baskets with the white women for second-hand clothing.

Every Indian and his squaw spent their money in British Columbia. The canneries were owned by Canadians or Britishers, and the wealth from the natural resources of the province was being utilized in Canada. The canning season was anticipated with pleasure by the Canadians, brown and white, and the winters were easily passed through on the results of the summer's work.

Enter: The Japanese

A few years ago the natural-born fisherman of the Orient left his native land and crossed the Pacific to explore the possibilities of the "big" land. He tried farming; it did not suit him. He tried the handling of lumber in the saw-mills, and although some liked the life, the greater number took to fishing.

White men commenced to instal gasoline engines in their fishing boats to facilitate speed in getting in and out from the canneries. Japanese followed suit, but where a white man put in a seven horse-power engine the Jap had a ten horse-power motor.

Canneries began to find that the Japanese seldom was off the drift for a drunk, which could not be said of the white man or Indian, and gradually the canneries showed their preference for the Japanese to such an extent that the white men have almost been eliminated from the fishing on the coast. A few Indians and the Japanese control the situation.

During 1917, for twelve miles up the Fraser river from the mouth, which constitutes the principal channel for fishing, there were 2,500 Japanese fishing to less than 100 white men, and the majority of that hundred were Swedes and Norwegians.

Create a Monopoly

The Japanese controlled the situation. They bought the fish from their own fishermen, and their buying boats would run the price from 6½ cents per pound to 15 cents before

the wholesaler could get it. The American buyers came into Canadian waters and purchased the fish at any price to keep their market and fill the cans they had contracted for with their labor and their purchasers.

The Canadian canneryman found himself at a decided disadvantage through a condition he had brought on himself.

All last year the Japanese were hiring their fish collecting boats and paying a good figure for their rent. As usual the canny little Scot of the Pacific did not like to see that profit going to someone else, so during the winter months there were ten new carriers built at Steweston. These boats ranged from forty to eighty-five feet, and carry one horse-power to every foot in length. The beam is wide and the draught suitable for deep sea.

They Slip One Over

During a prospecting tour to the west coast of Vancouver Island last year two Japanese found that the salmon come down that coast, in through the straits of Juan de Fuca, up past the canneries from Bellingham, Wash., north to the Fraser river. They also found that the traps in the Puget Sound capture many of these fish before they reach the Fraser river.

Not to be beaten, they came back and built fifty Columbia river boats of extra strong construction, fitted each with a ten horse-power motor, took four of their ten carriers, and are now on the west coast of Vancouver Island heading the fish off before they come through the straits or go on to the Columbia river.

One Japanese informed the writer that he, his wife and one boy sixteen years of age had made \$2,340 in two months this spring, fishing spring salmon by troll. This system is inexpensive because it does not require a net, and no equipment except a good boat and a three-line troll.

Indians Becoming Sulky

Another point made by the Jap fisherman was that if the Canadian market was not paying enough to suit the fisherman he could very easily dispose of his catch just outside the three-mile limit to some United States carrier that would pay a cent or two more.

The Indians are resenting the Japanese encroaching on their preserves and are growing very sulky. One prominent Indian from a northern tribe, who had an education in one of the mission schools, stated that the Japs had driven the Indian out of the Fraser river, and now the Oriental is moving to the west coast and up the northern waters, with the result that the Indian will soon have no fishing grounds of his own. This intelligent Indian states that the northern Indians will not submit as meekly as the south coast Indians did, and he predicts trouble if the Japanese treat the original fishermen of the province with the same contempt that they have done in the past.

Fleet Steadily Grows

It is not the size of the coasting vessels that the Japs are building that is impressing the people of the Province of British Columbia, but the gradual expansion of the fleet that is of paramount importance. The workmanship on these boats is also attracting much attention, some of the larger ones have but little metal, all the joints being mortised and all pins made of wood secured by locking pins, also of wood.

While all the large shipyards of the province are engaged in turning out tonnage to offset the activities of the U-boat, the Japanese shipbuilding firms are slipping into the breach in the matter of smaller craft, but none the less important.

(Continued on Page 146.)

The Functions of the Imperial War Cabinet

Formation and Work of the Imperial War Cabinet Has Been One of the Most Remarkable Events in the Political History of the British Empire—Personnel of the Cabinet Worthy of its Unprecedented Range of Representative Authority and Influence

By H. MACDONALD

FOR the most part the greatest moments of life, public or private, come and go almost unawares. The trouble with most men, and still more with statesmen, is not that they sometimes dream, but that they do not dare to dream high enough before the soul and compulsion of the world outstrip them. Why should there not be mighty efforts and achievements in peace as in war—for creativeness as for destruction? There is no answer; or none except that the lower play of party is the bane of democratic freedom.

Mr. Lloyd George took the historic step last year of summoning Dominion Ministers and Indian nobles to join in an Imperial War Cabinet. This, while it sat, was a supreme Government and Executive, representing and directing the whole British Empire. The Imperial Conference is, of course, a different thing. It meets under the chairmanship of the Colonial Secretary, and all the overseas representatives are entitled to attend it.

A True Imperial Government

But the Imperial War Cabinet is a true Imperial Government,—as none was before it,—for every purpose of the war. It is an organ of action and management; it is a compact executive, meeting under the British Prime Minister. Sir Robert Borden in the War Cabinet can only be accompanied by one at a time of the colleagues who went over to England with him. All of them can attend the Imperial Conference. On the small Supreme Executive, while it sits, any Imperial representative has the equal and full powers of question and suggestion, of examination, of initiative hitherto reserved to the chief Ministers of the United Kingdom.

This is amongst the most remarkable events in the political history of the British races. It may well thrill the mind of any thinker to reflect that, in the name of British power and freedom, statesmen from all the five continental spheres are met in London, as a Supreme Executive to direct the fuller part of the whole Ocean-Commonwealth in the war, and to shape other issues for 400,000,000 of people and a quarter of the world.

Epoch-Making Work Started

History is being rapidly made. In eighteen months, Mr. Lloyd George has accomplished or inaugurated at least five separate things of epoch-making importance. His Government has already restored British agriculture; fought down to manageable limits the submarine menace, which was the gravest danger the British Empire ever knew; laid down the beginnings of a sounder basis of our rule in India; called a war union of the whole British Empire into executive being; while the British Prime Minister personally took the chief part in creating at Versailles the nucleus of a League of the Allies, which, in building up its own system and policy, will make the practical framework for a League of the Nations. The personal composition of the Imperial War Cabinet is worthy of its unprecedented range of representative authority and for its influence over a quarter of the earth.

As for the necessities and possibilities of business, they are as diverse as momentous. There are the questions of

shipping and trade. Of the whole Empire, merchant shipping is the common life blood. Beyond these, but not beyond present necessity, for further thought and action in advance are the overseas problems of recuperation and emigration, the production and exchange of raw materials, their security against any revival of alien efforts to gain control or undue influence by indirect methods. There is the whole complex question of the future of the Empire's trade and communications, and the adjustments of tariff arrangements, with full consideration for the interests of the Allies, and with a sane view to a more rational conduct of the whole world's commercial business.

World a Smaller Place

Intermittent contact, however well used while it lasts, is no longer enough. The world is becoming a smaller place. Its conditions of intercourse are irrevocably revolutionized. The war has for instance crowded into a few years the normal progress of whole generations with regard to flying. Ottawa and London are going to be but a day's flight from each other by large passenger planes, Australia and Britain will connect by a five day's service in the same way. On the other hand, Pan-German designs towards the Atlantic, on the one hand, towards Russia, India and China, on the other, show the futility and danger of segregated politics for the different communities of the Empire. The federation of the British Empire itself is an essential factor for the practical working of a permanent League of the Allies. The question of Empire is no longer permissive or theoretical; it is actual and compulsory. It is a question of what we can do for each other and of what we must do. For years after the war, co-operation between the Mother Country and all the Overseas Dominions will be as imperative as now, perhaps more so. We cannot deal adequately by intermittent contact with such continuous and pressing and multiplying business as the present Imperial Executive has to manage or contemplate. The self-governing Dominions will remain in undiminished control of their several responsibilities and all must be done by unfettered counsel and free consent. But for that reason, it is not the less necessary that the Imperial War Cabinet should be a standing institution.

Coal From Illinois Now Available For Canadian Manufacturers

We have just received a communication from the Fuel Administrator for Ontario, advising that the United States Fuel Administration, by an Order, has enlarged the field of the Illinois coal operators to include the lower Peninsula of Michigan. This will permit the entrance of Illinois coal into Canada via Detroit. The period during which this will be effective is July 1st to October 1st, 1918.

This information is being given so that all members may avail themselves of this new supply of coal within the period mentioned.

How the German Circle System Operates

The Centre of a Circle is Always One of the Large Banks Which Controls and Directs the Work and Operations of All Its Concerns, and in Many Cases is the Actual Owner of the Business Firms, with Nominees on Boards

By E. SAUNDERS

(Reproduced from "Production")

THE importance of co-operation in the German system of national organization and our own efforts in this direction for war purposes has brought out the risk we ran as a nation before the war, from want of unity and our adherence to the principle of *laissez faire*. The object of this paper is to illustrate the power that united effort confers upon a community, and the diagram is intended to show at a glance the principle upon which such a system can be created.

The diagram and methods are to a large extent an adaptation of what is known as "The German Circle System," as practised in South Africa and in many other parts of the world to a greater or less extent. The following description is based on the work of one of the circles in control of a large group of mines in the Transvaal, the system and principle, as well as the rules which control it, being common in main essentials to all other circles of a similar nature.

The centre of a circle is always one of the large banks, which controls and directs the work and operations of all its concerns, and in many cases is the actual owner of the business firms; in every case they have nominees on the boards of large companies, and retain the right to veto transactions they do not consider satisfactory.

The Scheme at Johannesburg

A Finance Company, Limited, under German Law, started operations in Johannesburg. It was supported by the Deutsche Bank and others. An advance agent was sent out armed with practically unlimited credit from these institutions, and was welcomed by syndicates and small companies requiring capital.

The system adopted was as follows:—a company with a capital of, say, £20,000 needed help. The Finance Company was ready and eager to assist with guarantees of capital provided no actual cash was required except what came out of the mine itself. The first step taken was to increase the nominal capital of the company to, say, £100,000, the owners of the old company being paid out in shares in the new concern. The Finance Company retained control and power when increase of capital was required to secure options on any new issues of shares.

Orders for machinery were sent to Germany and arranged by the Bank, their guarantee ranking as a first call on the mine. The bank thereby controlled the whole of the mine and its output in exchange for shares issued to original owners, which now came under the automatic control of the bank.

This Finance Company secured the control of a considerable number of groups of claims which they amalgamated and formed into companies. Orders for machinery, etc., were secured by first mortgage or debenture bonds, and these bonds were handed to manufacturers as security for due payment. These debentures, being guaranteed by the bank, were as good as cash, and readily accepted by the manufacturers who supplied machinery on long terms of credit.

It will be seen that the Finance Company thus obtained complete control without any direct payment.

The Finance Company were always careful to secure the best possible technical advice, and, before undertaking to assist a mine made the most careful and full investigation, thereby reducing their risk to the smallest extent possible.

Outside Capital Used

Now, as it was not part of the policy of the Finance Company to risk any more of the Deutsche Bank's capital than was absolutely necessary, if English, French, or other capital could be obtained for the purpose, the following steps were adopted.

Having obtained complete control of the mine, which had been proved to be a paying proposition, steps were taken to proceed with its flotation on the London market, and, as the Finance Company had taken power to secure issue of new capital by obtaining options on new issues of shares, a new and enlarged company was brought out.

The company now appeared as a concern of £250,000 nominal capital, £100,000 of which went to original shareholders, £100,000 was offered to the public at £2 5s. and £50,000 held in reserve for future contingencies. The Finance Company meantime having obtained an option on these shares at £2, the extra 5s. being their commission for guaranteeing the new issue.

By judicious advertising and wire-pulling, financial houses and others were induced to make large applications for the shares at the full rate of £2 5s., and when final advertisement of the issue appeared, most of the shares having already been taken up, the public eagerly absorbed the balance.

The capital thus obtained was applied first to pay for the machinery, i.e. by redeeming the debentures (as arranged) by paying them off at a premium of 5% for the privilege, the remainder of the capital was applied to working expenses.

It will be observed that the Finance Company had succeeded in obtaining complete control of the mine, securing orders for a large plant of machinery from Germany, and employment for numbers of German workmen, this being one of the terms insisted upon by machinery manufacturers as a permanent feature of the contract, and incidentally securing a very large profit to themselves as well as the potentiality of good commissions in future transactions.

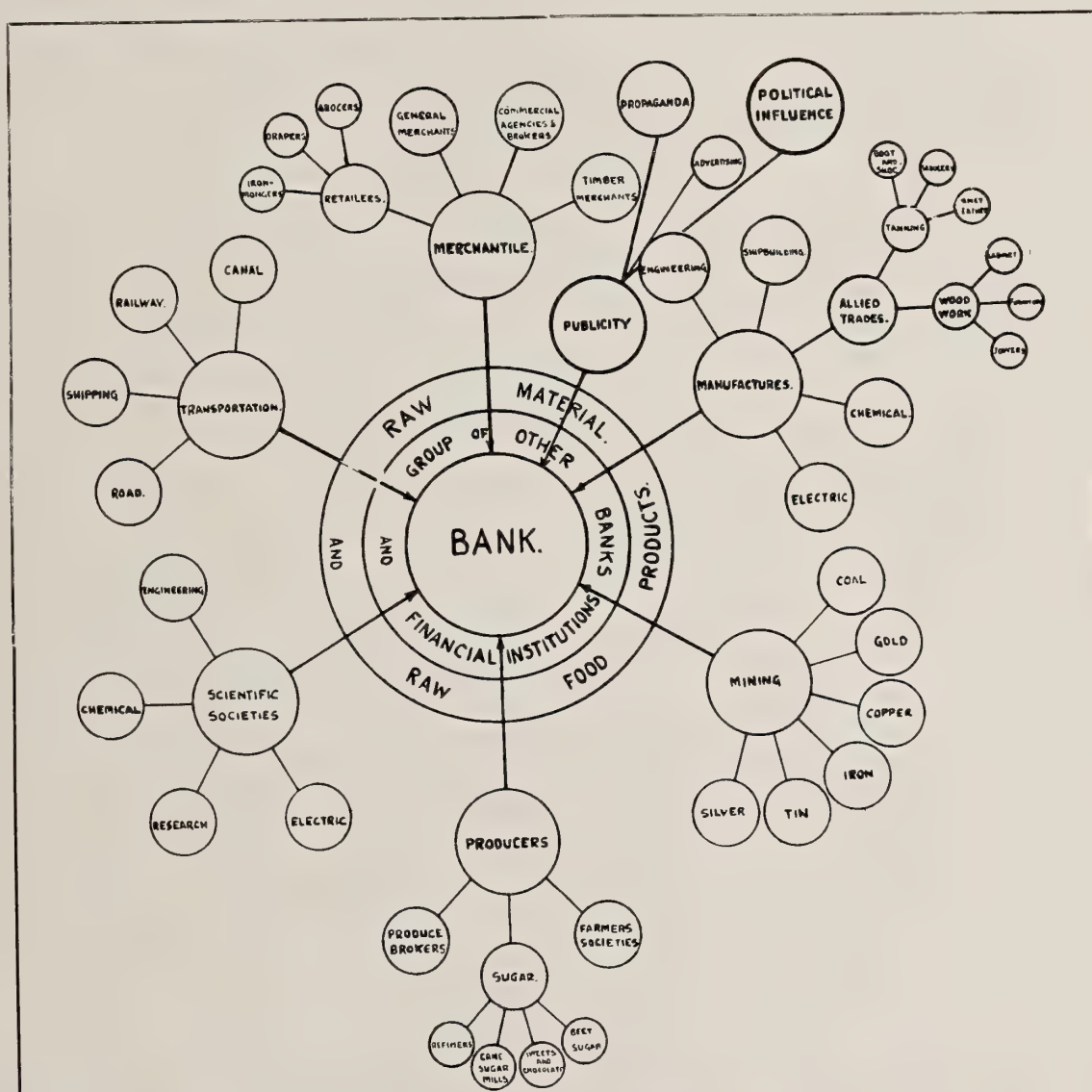
Proposition Was Profitable

The management was good and large dividends were paid, as the richness of the mine was undoubted, and, as a generous policy was adopted with employees and staff, the Finance Company became popular and much sought after, as it was known that capital would be available for machinery, etc., when required by concerns taken over by them.

Up to this time the Finance Company was under the German Limited Laws, but it was now considered wise to

alter this and a change made to a British limited liability company. This, owing to the laxity of our company laws, was a very simple matter, and the firm appeared as a British company registered in the Transvaal. The whole of the board and staff were, however, either directly or vir-

in the new company being paid as the full purchase price. These shares represented about 70% of the nominal value of the new company; a portion, however, of the shares paid were called founders' shares, and carried special rights and privileges. The whole of the new issue was taken up in the



Description of Circle System as Illustrated by Diagram

Centre is bank—from which all radiate.
 Second circle—other banks and financial institutions.
 Third circle—raw materials and raw food products.
 These three circles are common to all others.
 Fourth series of arches comprise—mining, producers, scientific societies.
 Transportation, mercantile and manufacturers.
 From each of these, industries common to each branch radiate.

Rules of Circle

1. Each company or business is nominally independent of all others, but being financed by bank or other financial institution in circle is subject to rules laid down for general control and direction of circle.
2. Each concern conducts its own business with no other supervision than its board of directors or managers.
3. Unlimited financial support is available, provided board of control is satisfied business is sound.
4. Bank supporting concern has right to appoint nominee on board in every case.
5. There is no competition between concerns in circle.
6. British subjects to have preference in employment in every case, unless it should be necessary for special reasons to employ foreigners, in which case application has to be made to board of control and sanction obtained.
7. All purchases to be made from members comprising the circle whenever possible.

tually paid servants of the Deutsche Bank. The change was also made an occasion for tapping the British public, as in the new British birth of the firm an addition to its capital was not only useful but could easily be obtained.

The original company was taken over by the new concern, at an agreed figure as a going concern, and shares

usual way, and in due course a block of about 25% was offered to the public at a premium of about 60%, and the founders' shares converted into ordinary stock at a premium of about six ordinary shares to about one founder's share.

The Finance Company now appeared as a powerful "Parent Company," with a capital of over £1,000,000, and

was ready to create subsidiary companies or undertake business of any kind likely to enhance its wealth and power, and as the question of absolute control was most carefully safeguarded and vested in the bank through its nominees, the cash for all this having been paid for by the British, French, or other people, the benefit and the profit went to Germany.

Worked in New Fields

The board of management of this "British Limited Liability Company" very soon displayed their activities in new fields, and obtained options on new ground as well as launching new mining concerns, but they did not by any means confine their operations to mining propositions.

Their very strong financial position and the importance of their connection gave them great power and opportunities, and these were used to create ramifications in trade and industry by bringing other interests within the circle of their influence.

It was not, however, policy to act openly, and steps were taken to obtain a controlling interest by more or less secret methods; this was generally done by financing new concerns by a system of guarantees until they were sufficiently advanced to be floated, the Finance Company, however, always retained complete control, and insisted on the right of options on shares in any issue of capital, out of which they obtained handsome commissions.

All these concerns were subject to the most rigid rules and regulations:

1. They were forced to employ Germans in all important positions unless for necessity, policy, or appearances it was considered advisable to do otherwise.
2. A representative of the bank was always nominated on the board of a company or as manager.
3. No one was allowed to trade with any firm outside if the goods required could be obtained within the circle.
4. Each company had its own board or system of management, and was not interfered with in any way in the conduct of its business.

5. Unlimited financial support was always available provided the Finance Company was satisfied the business was sound.

6. Competition was not allowed between the concerns within the circle.

The above very brief illustration of the business methods of one of the German Circles in South Africa is typical of all, and as the various circles work together it is not difficult to realize the immense power they wield commercially, and how this power can be and is extended to embrace the politics of the country which they direct to their own ends.

The combination of so many concerns means a large spending power, also employment of many thousands of men, and, as the power to confer privileges is under the control of the inner circle, it follows that preferment can be utilized as a useful lever in many ways.

The above short description illustrates the methods of the German system of control, and reference to the diagram, which is intended to indicate how we can adapt its best points to our own case, is placed before the reader for serious consideration.

Without competing against each other, a combination of industry and commerce can so arrange their business that it is to the mutual benefit of all concerned.

Explanation of Diagram

The diagram is supposed to represent the interests of a group comprising the trades and industries of the Empire, but in actual application one huge group would be unworkable. There could, however, be hundreds, subdivided according to local conditions and circumstances, which could be affiliated in such a way that, where the main interest was common to all, they could work and assist each other for mutual benefit, thus bringing about a system of unity for the common good. Legislation would necessarily follow such a combination, and in all cases where national safety was concerned the value of such a system is impossible to

(Continued on Page 144.)



A Fine Product of Nova Scotian Industry

This is the steel cargo steamer, "War Bée," recently launched from the yards of the Nova Scotia Steel & Coal Company, at New Glasgow. This ship has the following principal dimensions: 248 feet 9 inches long, 35 feet moulded beam and 20 feet moulded depth. The deadweight carrying capacity is about 2,400 tons and the draft 18 feet. There are two cargo holds—one forward and one aft, each served with two large hatches 30 feet long and 19 feet athwartship. There are two folding masts, each with two derricks, and four cargo winches. The engines and boilers are placed amidships. The engines are triple expansion type and have the following dimensions: 17, 28, 46 x 33-inch stroke and develop about 850 I.H.P., 90 R.P.M. Steam is supplied by two Scotch type boilers 11 feet 6 inches diameter and 11 feet long with a working pressure of 185 lbs. per square inch. The boat is fitted with electric light throughout. Accommodation for the officers is in the steel deckhouse amidships, and for the crew, forward in the forecabin deck. All accommodation, lifeboats, and life saving appliances are to Board of Trade requirements, and the ship itself is built to Lloyd's 100 A1 class for ocean service.

Activities of the Prairie Provinces Branch

Transportation Matters to the Fore Recently—Views on the Recent Increase in Rates—Brandon Manufacturers Secure Grand Trunk Connection at Forrest—Inter-switching Regulations Under Discussion—Efforts of Branch to Settle Postal Strike

By G. E. CARPENTER

Assistant Secretary, Prairie Provinces Branch

THE acceptance of the schedule of increased wages authorized by Secretary McAdoo, Director-General of the United States Railways, by the Canadian Railway War Board for payment to railway employees in Canada, resulted in an Order-in-Council being passed by the Government, upon the recommendation of the Board of Railway Commissioners, increasing rates in Canada. A similar increase followed in United States when the wages of railway employees were advanced there.

The outstanding feature of the Order-in-Council to our members in Western Canada is to the effect that the disparity between the rates charged for similar services performed by the railways in Eastern and Western Canada has at last been recognized by the Board of Railway Commissioners, and the Order-in-Council provides that class rates on general merchandise in Eastern Canada shall be increased by 25 per cent. over the present rates. The present rates were increased 15 per cent. on the 15th of March of this year. On the other hand, class rates on general merchandise in Western Canada are increased by 25 per cent. over the rates in effect prior to the 15 per cent. advance on March, 15th, 1918. In other words, that advance is increased from fifteen to twenty-five per cent. The minimum charge for a small shipment is increased from 35c. to 50c.

There are a number of exceptions in the case of commodity rates where maximum increases are provided. These follow closely the increases allowed in the United States on similar rates, and are too large in number to be quoted here. If any definite information is desired by any member as to increases on any particular movement the undersigned will be pleased to furnish the information.

Transfer at Forrest

Upon the formation of a Brandon section of this Branch our members in that city took up an old outstanding matter of great importance to Brandon shippers, with a determination to see it through to a satisfactory conclusion, namely, the question of a connection with the G.T.P. which would enable our Brandon members to obtain a reasonable freight service to points upon the Grand Trunk Pacific west of Brandon. This matter has been dragging for many years, notwithstanding the efforts put forth by other bodies in Brandon to secure a satisfactory interchange. It was, therefore, necessary for our Brandon section to devote considerable time and care to the handling of this subject, which they did in such a thorough manner that, notwithstanding previous orders of the Board of Railway Commissioners to the contrary, at hearings of the Railway Commission in Winnipeg, on June 14th they presented such a strong case for the establishment of a transfer between the Canadian Pacific and Grand Trunk Pacific at Forrest that upon the 11th day of July the Board of Railway Commissioners issued an order, No. 27436, reading as follows:

"IT IS ORDERED that the Grand Trunk Pacific Railway Company be and is hereby directed to construct interchange tracks between its railway and the railway of the Canadian

Pacific Railway Company near Forrest, Manitoba; the said Railway Company forthwith to file detail plans of the proposed interchange; the work to be completed within sixty days from the approval of the plans by the Board, and the expense of constructing such interchange tracks to be borne and paid for by the Grand Trunk Pacific Railway Company."

Interswitching

For the information of the members of the branch the following letter to the manager of the Transportation Department is quoted showing the efforts made by the Transportation Committee of the Branch to protect the interests of members.

Winnipeg, July 16th, 1918.

J. E. Walsh, Esq.,

Manager Transportation Department,
Canadian Manufacturers Association,
Toronto.

Dear Mr. Walsh:

At a meeting of the Transportation Committee of this Branch and interested members the Board of Railway Commissioners' General order No. 230 was considered at length. Very strong exception was taken to clause No. 14 thereof which takes away from shippers the right to route their traffic, and the undersigned were instructed to write you as follows, and urge that the Association should vigorously oppose Section No. 14 of the Order and demand the repeal thereof.

In the first place the Chief Commissioner, in his judgment dated May 15th, 1918, in dealing with the justification for subjecting the facilities of one railway company to the other, states that the reason therefor is that of the public interest and convenience, and in this connection he quotes from the judgment of the late Chief Commissioner, Mr. Justice Killam, who, he states, approached the subject from the standpoint of public interest and treated the inter-switching service as a joint movement. Chief Justice Killam, in dealing with the London case in his judgment dated July 16th, 1905, said: "The provisions of the Railway Act which require railway companies thus to interchange traffic at connecting points are introduced, not for the purpose of benefiting the railway company at the expense of another, but solely in the interests of the public. The law cannot recognize anything in the nature of a good-will of the business of either railway company thus affected, for which another should give compensation." This is what shippers have always contended, viz., that on shipments from a plant located on the Canadian Pacific at, say, Toronto, delivery of which was required upon the Canadian Northern at Winnipeg, the shipper had just as much right to route such a shipment via Canadian Pacific to Winnipeg, and thence over the Canadian Northern terminals to the consignee's siding, as he had to route the shipment over the Canadian Pacific Railway to Port Arthur, thence Canadian Northern Railway to Winnipeg. In other words it has always been maintained that a shipper has the right to route his traffic over any continuous railway line or combination of lines, so long as it is not unduly circuitous, in order to avail himself of the service which is in his interest. This right was upheld in the original order of the Board, and is confirmed in the Board's General Order No. 230, because it also deals with interswitching as "A local movement in the public interest." But the very advantage to the shipper in providing for this joint movement is offset, overcome and wiped out of exist-

tence by clause No. 14 which is directly opposite to the principle that interswitching is in the public interest and convenience. This clause of the Order disregards and entirely sets aside public interest and convenience, and submerges both to the selfish interest of the initial carrier by providing that "The interswitching tolls prescribed by the order shall not deprive the initial carrier of the line haul." This is contrary to all established precedent oft repeated by rate regulating bodies. In other words the right of the shipper to direct and control the routing of his merchandise is set aside in order to insure a railway company a certain earning. The spirit in which such a regulation could be conceived and promulgated by the Board of Railway Com-



W. S. Fallis

Mr. W. S. Fallis, for the past six years Western manager of the Sherwin-Williams Company of Canada, Limited, has been appointed managing director of the company. Mr. Fallis joined the Sherwin-Williams Company in 1899 as travelling salesman in Western Ontario. In 1900 he was transferred to the Maritime Provinces and Newfoundland; in 1902 to the West Indies and in 1903 to London. In 1907 he became sales manager at Winnipeg, and in 1912 Western manager. He is a Past President of the Canadian Credit Men's Association and ex-Chairman of the Prairie Provinces Branch, C.M.A. This year he acted as Chairman of the Royal Commission to investigate the operation of the Manitoba Workmen's Compensation Act.

missioners is beyond the understanding of the members of this branch and is bitterly resented by them.

To show you the many ramifications of clause No. 14 of the Order as it now stands, let me point out that shippers have of necessity to pay particular attention to the movement of their raw materials and products, with the result that they keep in constant touch with the service rendered by the several railway companies over various routes available for the movement of such materials. From this study they are able to route their incoming and outgoing shipments in such a manner as to obtain the best dispatch. While this is in the interest of the shipper or his customer, it also is in the public interest, because if a certain route is congested it is undesirable that additional traffic should be shipped over it, thus increasing the difficulties of the railway company, and the shipper's right to route his own traffic is one of the first remedies in such cases. In fact it is often the exercise of such right that brings home to the railways the necessity of putting forth effort to remove the cause of congestion and provide better service for the public generally.

As to the third paragraph of clause No. 14, providing that the initial carrier must supply a car within forty-eight

hours or lose the right of the line haul, attention only needs to be drawn to the manner in which business must be conducted in certain lines to show the absurdity of such a regulation. Can you imagine for a moment how the business of the country could be conducted if, say, a packing-house located at Edmonton, on the Canadian Northern, which has to reach the Vancouver retail market for a certain day in competition with packers at Calgary and local abattoirs at Vancouver, should have to wait forty-eight hours while the Canadian Northern was trying to scare up from its meagre supply sufficient refrigerator cars to take care of the traffic. In addition to this, at the particular time of shipment the Canadian Northern might not be in a position to furnish a reasonably expeditious service to Vancouver, even if it had the cars available. At another point and in another territory the conditions might easily be the reverse. Similar conditions might and no doubt would apply to shipments of live stock, fruits, butter, cheese, eggs and other highly perishable articles. In other words it is just as necessary for the shipper of such goods to have an intimate knowledge of the service that can be furnished by the carrier and the right to exercise the routing of such traffic over lines of the carriers that can provide the best service, as it is for such shippers to exercise care in the growth or manufacture of such commodities. Surely this has only to be stated to be recognized. What is the use of the grower of Ontario fruit located at a local point on one railway system in Ontario trying to reach this Western market over the lines of that carrier if at the time of shipment it is unable to provide expeditious movement through to destination?

May Discontinue Business

Again, as you well know, there unfortunately comes a time when many firms are unable to secure justice from certain carriers, and the best remedy that they can have at their command is to discontinue doing business with such carrier by means of exercising their right of routing their traffic over lines of a carrier which will deal with them fairly. The condition is different in the United States, where a shipper can appeal to the Interstate Commerce Commission when a just claim is refused recognition, but even there the Interstate Commerce Commission does not deal with claims for loss or damage. Of course it may be said that the shipper has the right to sue, but you know full well the difficulty that the shipper is frequently confronted with in proving his claim at law, and the very great expense attached thereto, involving the expenditure of considerable time by high-priced men, which is to be deprecated at any time, but especially under present conditions.

Then, too, shippers through the country sell their products to the Railway Companies, and naturally prefer to route their traffic over the Railway Company which buys their products. This is a common principle upon which all business is conducted and the members of our branch at Winnipeg cannot see why it should be upset.

Service, the Only Competition

At the present time the only competition between railways is that of service. As you know they always get together in the question of rates and regulations, but from time to time one or the other is able to provide a more satisfactory service to shippers than the other. I referred to the matter of congestion above, but a satisfactory service is not to be determined by that alone. In some cases it is the local employee who is more courteous, more attentive and a better man in many ways, and the shipper prefers to do business with him. Why should the shipper be compelled by any regulation of the Board of Railway Commissioners to do business with railway employees who are the reverse of this in some cases? At other times an epidemic of pilferage springs up on the lines of a certain carrier in certain districts, and as soon as the shippers learn of this they naturally desire to avoid difficulty of this kind and route their traffic over lines where they will not experience this trouble. Again, why should any order of the Railway Commissioners say that shippers must expose their goods to this additional risk and all the difficulty consequent therewith?

While many points are common between two railways it does not mean at all that they are each able to provide the same service. For instance, at Brandon, the Canadian

Northern are up on the hill and the Canadian Pacific are down in the valley. Under clause No. 14 of Order No. 230 a shipper located upon the Canadian Pacific at Winnipeg would have to forward his carload traffic over the Canadian Pacific to Brandon, and the consignees located on the hill would either have to pay an additional toll or haul the goods up the hill. I am informed that at Rosetown the Canadian Pacific and the Canadian Northern are two miles apart. Some merchants are located upon the Canadian Northern and some upon the Canadian Pacific. The effect of clause No. 14 of the Order would be that the merchants located upon the Canadian Northern would buy from wholesalers and manufacturers located upon the Canadian Northern in preference to those located upon the Canadian Pacific. The reverse would be true of merchants located upon the Canadian Pacific at Rosetown. Why should our members be placed at this disadvantage by an order of the Board of Railway Commissioners?

Another point, if clause No. 14 of General Order No. 230 is given effect it will certainly interfere with the movement of return empty special equipment. Take refrigerator cars for instance. It will happen at times that one line or the other will have a surplus of refrigerator cars in a certain territory, but what use are they to that railway or to the public if the movement of perishable freight happens then to be in a territory where the shippers are unfortunately located upon another line? For instance, there may be a movement of Grand Trunk refrigerators from points in Eastern Canada with fruit to Winnipeg which might well be loaded back east with export meats, but the packers in Winnipeg are located upon the Canadian Pacific, and under clause 14 of the Order their products must move over the Canadian Pacific. What will the Grand Trunk do? Haul the refrigerator cars back to Ontario empty while the Canadian Pacific digs up another lot, resulting in two movements parallel to each other, one empty and one loaded? Surely no regulation which brings such a condition about, or even leaves matters in a shape that such conditions may arise, can be said to be in the public interest. In fact it must be apparent that it is quite the reverse.

Order is Inconsistent

There was a time when the railway companies tried to control the routing of traffic originating at private sidings on their lines by inserting in all agreements made for the construction of such private sidings a clause to the effect that as a consideration thereof the shipper using the siding would route all competitive traffic over the railway constructing the siding. but even such railways, acting in their selfish interest, recognized that the shippers should not have to pay more as a reason thereof and added the words, "At equal rates." Clause No. 14, however, has the effect of doing away with the words "At equal rates," because if initial carriers have the right of the line haul it is not to be expected that they will absorb switching at destination to the tracks of their competitors, as they do at the present time, because the very condition that compels them to do this now, viz., to secure the haul, is removed by the Board's Order. To show you how inconsistent the Order in this interswitching case is, I have only to refer you to hearings at Winnipeg before Justice Mabee when these siding agreements were under consideration. At that time the late Chief Commissioner made it so apparent that the agreement would not hold water that the Railway Counsel asked for an opportunity of conferring with Isaac Pitblado, who was acting for the applicants, with a view to arriving at a satisfactory condition by the following day, and one of the clauses that the Railway Companies withdrew from the agreement, was the clause that shippers for whom the siding was constructed must route competitive traffic over the railway constructing the siding. The Railway Commission then approved of the amended agreement, and yet in clause No. 14 of General Order 230, they provide that the initial carrier shall have the line haul. What could be more inconsistent and wherein could less regard for the shipper's interest be evidenced?

Enclosed herewith please find letters from interested shippers.

Yours faithfully,

W. R. INGRAM,

Chairman Transportation Committee.

G. E. CARPENTER,

Assist. Sec. Prairie Provinces Branch.

(The effective date of the order has been postponed until Oct. 1st.)

Farewell Luncheon—Mr. Fallis

Mr. W. S. Fallis, Manager of the Sherwin-Williams Company of Canada, Limited, in Western Canada, will leave Winnipeg in August for Montreal to assume the important duties of General Manager of that Company in Canada. During his business career in Winnipeg, Mr. Fallis has taken an active part in many commercial organizations. He is a past chairman of the branch. He has been a member of the executive committee for years and acted as chairman of the Royal Commission which investigated the administration of the Workmen's Compensation Act by the Board, where his services proved of great value to our members. His large circle of friends and business acquaintances feel that the services that he has rendered to the business community of Winnipeg should be remembered in a fitting manner, and that an opportunity should be provided his business associates of saying farewell and wishing him continued success in his new and larger position. Therefore the Credit Men's Trust Association and the Board of Trade and this Branch have arranged for a luncheon, at which Mr. Fallis will be the guest of honor, on Friday, August 12th, at the Fort Garry Hotel.

Postal Strike

In common with other business men, our members in Winnipeg and other Western cities have suffered great inconvenience and loss from the recent postmen's strike, and while very little is to be gained by recrimination it is, to say the least, a matter of deep regret that the postal employees of the Government could not obtain any recognition from the Department of their complaints as to unsatisfactory conditions surrounding their employment. The long-continued delay by the Department in dealing with its employees, and, in fact, the total disregard with which their communications were treated by the Department, created a condition which the postal employees felt warranted them in striking.

The striking employees of the Department demanded a Board of Conciliation, upon which they would have representation, to go into the conditions of employment and wages paid. But this could not be granted by the Government, as it would constitute a delegation of the function of Parliament to persons unauthorized to deal with this matter. A special committee consisting of Messrs. N. W. Warren, E. Parnell, W. R. Ingram, L. R. Barrett and J. B. Hugg, was appointed by the branch to work with a similar committee from the Board of Trade with a view to securing a resumption of the business of the Post Office Department. This committee remained in practically continuous session the second week of the strike, interviewing representatives of the Government and the postal employees, with the result that the Minister of Labor, the Hon. T. W. Crothers, promised that the Special Service Commission would at once investigate the men's complaints. The committee was able to persuade the men to accept this means of adjustment of their difficulties and return to their employment, thus insuring the members of the branch and citizens generally a resumption of a regular mail service. Great credit is due to your representatives on the special committee referred to above, whose labors unquestionably proved of the utmost value in affecting the settlement at the psychological moment.

Re-adjusting Business to a Peace Basis

When Peace Comes There Will be Three Big Problems to Solve; Work Must be Found for Released Men, Both Civilians and Fighters; The Fundamental Necessities Wherewith Again to Build Up Civilization Must be Provided and the Nation Must Hold its Proper Place in the World's Industrial Development

By HARRINGTON EMERSON

(Reproduced from the "Scientific American")

WHO can look ahead and predict what is to happen when the war is over? Who can even predict how long the war is going to last? My personal opinion, though this is not the place in which to bring forward arguments in support of this opinion, is that it will last perhaps thirty years. But who knows? Who can say anything except that neither side can afford to lose, and that accordingly the war must be fought to the utter exhaustion of one or the other side?

At the present moment, then, the two great duties before us are to win the war quickly if we can, or to adjust ourselves to its indefinite and intense continuance, absorbing all our men in fighting, all our surplus in backing them, all our women in working to support the demand for the materials and implements of fighting. Nevertheless, there are other duties which must not be neglected altogether. In time of war, it behooves us to confront the great problems of what will come with peace, however long deferred.

The readjustment from a peace basis to a war basis was difficult. But this readjustment, with its great demand for equipment, for material, for men, is simple indeed compared to the opposite one which will come with shrinkage of these demands. It is pleasant for the producer to have prices rise; whether he be employer or employed he is bound to profit. But it is a terrible thing for the producer when prices begin to fall.

Three Problems Enunciated

The end of the war will suddenly release from present employment several millions of men, and will in addition throw back into our seared and dislocated industries several millions of soldiers and sailors. Accordingly, when peace comes, we shall have three problems to solve. We must find work for the released men, both civilians and fighters. We must provide the fundamental necessities wherewith again to build up civilization. And we must at all costs hold our proper place in the world's industrial development.

The baby whose feeding is delayed half an hour becomes fretful. The man who has missed a meal is cross—and more dangerous than the fretful baby. Have you ever seen a mob of ladies and gentlemen storm a diner that has been put on a couple of hours late? An army fights on its stomach; a man twenty-four hours past his last feed is an anarchist. When he is few he is held in check by the policeman's club; when he is many he is the forerunner of revolution.

The returning soldier will be peculiarly impatient. Farmers, manufacturers, wage earners, will have been profiteering, in his view, while he has been risking his life. He may consider that his turn has come, that the right to work is the least of his demands. It is accordingly imprudent to allow any unemployment to develop. There must be jobs at a price for every man—at an economically possible price, not dependent on Government meddling.

This question of employment must be solved. Fortunately, it can be solved by undertaking at the same time the attack upon the second problem.

This second problem raises the question, have we ever, as a nation, undertaken the production in sufficiency of fundamental necessities? Has this ever been a consciously pursued policy? Let us see!

Civilization Marked by Foresight

We brand as thriftless the man who lives from hand to mouth, who spends to-day what he earned yesterday—or, mayhap, spent yesterday what he expects to earn to-day. He has not the foresight of the bee or the squirrel or any of those animals that, in season of plenty, store against the season of famine. Above this thriftless man comes the individual or corporation with proximate foresight, working to-day for next year's spendings. Civilization is measured by the percentage who do this. The savage hunts and fishes, receiving his reward the same day; he can scarcely understand the grower of crops, while the planter of an orchard transcends his comprehension entirely.

But there is even a stage beyond the proximate, represented by the man or the corporation who works, not for to-day, not for next year, but for all time. Ideals based thus on the ultimate can alone take care of the after-war difficulties. But our nation, even more than others, has been thriftless, immediate. According to the Bible, even the Egyptians, 4,000 years ago, knew enough to store in years of plenty against years of famine. How do we compare as a nation, with the old Egyptians?

The fertile tropical island of Guam, far out in the Pacific Ocean, a station on the cable to Manila, was taken from Spain in 1898, and has since belonged to the United States. We have undertaken for the last twenty years largely to regulate the lives and morals of the inhabitants. The island is well within the belt of typhoons, which are almost as likely to occur as are winter snows in New England. Yet on July 6th the Governor and Commandant reported, after such a storm: "Half the inhabitants are destitute, crops being destroyed and food scarce. I am feeding destitute natives from naval supplies and commandeered food stocks."

World is Short of Food

Now Guam is merely a concrete illustration of what has happened to the whole United States, to the whole world. We are all short of food—we, the greatest food-producing country in the world, because we are only a few months ahead of the need. We have discovered that famine was always just outside our door. Years ago, though stupidly blind to the imminence of a world war, I realized the possibility of other menace to the food supply. In the early part of the last century there was a crop failure nearly worldwide, caused, so it was said, by the volcanic dust from

the eruption of Mount Hecla, in Iceland, obscuring the sun so that in temperate latitudes there were frosts throughout the year.

Now, greater eruptions may occur at any time. Sun-spots may also bring about crop failures. There is always the possibility of a coincidence between a backward spring and a scorching dry summer, or an abnormal insect or fungus ravage. Is it then too much to expect that every civilized nation should have, as a minimum, a year's food supply ahead? Are we not to-day feeling the pinch of a food shortage, solely because men and animals and fertilizers have been withdrawn from agriculture, and there is not enough tonnage to bring from distant regions? Does it not therefore seem highly expedient and essential that a definite plan be adopted to increase the reserves of the necessities to the extent at least of a year's supply? And when we are confronted with the possibility of an immense over-supply of labor at a certain moment, does it not seem like flying in the face of Providence not to put the two problems together and let each solve the other?

The final problem is that of holding our own in the industrial struggle which will follow the termination of armed hostilities on the field of battle. Germany is planning to develop and organize that portion of the human race which is tributary to her, either immediately or by railroads ultimately to be built. And when we have counted the one hundred and fifty millions of the Central Powers, the one hundred and eighty millions of Russia, the three hundred to five hundred millions of China, the three hundred millions of India and Burmah which she plans eventually to tap, we discover that we have here three-fifths of the human race. One little island, the size of Cuba, filled with twenty five million ten-cents-a-day workers, has made and kept Holland rich. What, then, are we going to do about it? Or do we, perhaps, imagine that we are going to build ships, on six to ten dollar wages, against the intelligent Japanese who works for twenty cents?

Japanese Carriers on Pacific

At the very time when James J. Hill, as ultimate a provider as ever lived, was planning his two great Pacific steamers, the "Dakota" and the "Minnesota," a Japanese business agent pointed out to me that Japan would inevitably do the carrying on the western ocean. As one of the reasons, he instanced that repairs costing \$20,000 to a Japanese steamer in Seattle could be made for \$500 on the other end of her route. This was in 1912. Taking the hint, I invested in Japanese maritime securities; and they have proved better producers than the best American war babies.

Japan and China are two countries filled with intelligent, industrious, low-priced workers. They, and perhaps Germany, will be more ready for world trade than we are unless we use the very simple means of restoring the balance which I am going to lay down. This is not a plan of bureaucratic regulation from above. Such a plan resulted in failure in Russia, alike under autocratic, socialistic and anarchic management, and such a plan spells failure wherever attempted. The plan I advocate has nothing in common with it. It is intended to tide over a crisis in employment, to provide a surplus, and to promote our general welfare; yet it leaves to individuals all specific initiative.

The price of wheat is now fixed at \$2.20, a figure which, if perpetuated, would get us nowhere in the world's markets, either for wheat or for anything else, since it raises the price of everything else. The Government should not fix the open price of wheat. It should rather be always in the market—to buy at a minimum below which the price could

never fall, to sell at a maximum above which the price could never rise so long as the Government stock held out.

The Government should buy or erect great elevators, and act as a price stabilizer and an accumulator, thus fulfilling a function found essential in all organic life. The Government prices should steadily drop, perhaps one cent a month, for ten years, thus ultimately coming to a \$1.00 a bushel. The selling price would not drop so rapidly, since the object would be to accumulate.

Objection to \$2 Wheat

The main objection to \$2.00 wheat is that, locally in the United States, it inflates the price of everything else, and thus excludes us from the world markets, alike for our basic and manufactured and stored production. The falling price for basic commodities would benefit only the holders of debts and other obligations; but these are already reached by a stranglehold of taxation

The plan would cost the Government nothing. Wheat certificates, legal tender for all taxes, redeemable at face value in wheat at standard delivery prices, would be issued for all wheat bought. Wheat could only be withdrawn at a higher price through these certificates, presented for cancellation. Nobody would be forced to buy from or sell to the Government; but the farmer could lay plans years ahead, knowing what the minimum price would be. It would take a long time to accumulate six or seven hundred million bushels of wheat; the average price of the grain bought in ten years would be about \$1.60 per bushel. The higher price at which wheat would be sold would make up for the bookkeeping loss, for wheat certificates would be redeemed at face value under the current redemption rates. It might easily happen that a certificate issued at \$1.80 would be redeemed at a time when the Government was purchasing at \$1.75 but selling at \$1.85. A thousand-dollar certificate representing 555 bushels of wheat originally sold the Government would bring only 540 bushels. But even if there were a loss to the Government instead of a profit, what would it matter if employment had been furnished, new power developed, prices stabilized, danger of food shortage averted? The farmer, guaranteed a high though falling price for years to come, would feel encouraged to increase his wheat acreage and forced to hire helpers and to pay them good wages.

I have used wheat as an illustration, but it is only one item in a general plan to accumulate at least a year's supply of all necessities. The principle staple foodstuffs that can be accumulated and stored for a few years are wheat, corn, oats, pork, and perhaps canned salmon, canned fruits and canned vegetables. The same reliable market would be created for these as for wheat. As to every one of these items there should be gradually falling prices, the Government buying at one price and selling at another, accumulating great stores. After foods come fuel and clothing; after these, iron, copper and aluminum, zinc and lead, manganese, silver and gold, perhaps lumber and fertilizers and various other raw materials. All can be stored, all can be bought at one price and sold at another.

Stabilization of Silver

Finally, there is one more aspect to this proposition—and a most significant one. Among the commodities whose price stabilization I have suggested is silver. Now silver is the present standard of value in all the countries of cheap labor. These countries must have silver. The world's production of the metal for 1916 was 157,000,000 ounces, of

(Continued on Page 142.)

Full Text of the Railway Rate Increase

Order-in-Council Passed on the Recommendation of the Board of Railway Commissioners Allowing the Railways of Canada to Advance Their Freight Rates 25 per Cent. East of the Lakes and Approximately 20 per Cent. West of the Lakes

AS members of the Association have probably learned through the press, His Excellency the Governor-General-in-Council, on the recommendation of the Board of Railway Commissioners, made through the Minister of Railways and Canals, and under authority of the War Measures Act, 1914, issued Order-in-Council P.C. 1863, dated 27th day of July, 1918, at Ottawa, allowing the railways in Canada to advance their freight rates 25 per cent. east of the Lakes, and approximately 20 per cent. west. Details in regard to this advance are set forth in the above-mentioned Order, as follows:

1. Notwithstanding the provisions of any legislation heretofore passed, or of any rate-limiting agreement heretofore made, the charges for the carriage of freight on all railways owned, operated or controlled by the Government of Canada, and all other railways subject to the jurisdiction of the Parliament of Canada, shall be increased to the extent and in the manner hereinafter set out, that is to say:

TERRITORY EAST OF FORT WILLIAM.

Section 1. Class Rates.

All class rates in eastern territory shall be increased twenty-five per cent.

Section 2. Commodity Rates.

(a) Commodity rates on the following articles in carloads shall be increased by the amounts set opposite each:—

Commodities.	Increases.
Coal:	
Where rate is 0 to 49 cents per ton	15c. per net ton of 2,000 pounds.
Where rate is 50 to 99 cents per ton	20c. per net ton of 2,000 pounds.
Where rate is \$1.00 to \$1.99 per ton	30c. per net ton of 2,000 pounds.
Where rate is \$2.00 to \$2.99 per ton	40c. per net ton of 2,000 pounds.
Where rate is \$3.00 or higher per ton	50c. per net ton of 2,000 pounds.
Coke:	
Where rate is 0 to 49 cents per ton	15c. per net ton of 2,000 pounds.
Where rate is 50 to 99 cents per ton	25c. per net ton of 2,000 pounds.
Where rate is \$1.00 to \$1.99 per ton	40c. per net ton of 2,000 pounds.
Where rate is \$2.00 to \$2.99 per ton	60c. per net ton of 2,000 pounds.
Where rate is \$3.00 or higher per ton	75c. per net ton of 2,000 pounds.
Ores:	
Iron	30c. per net ton of 2,000 lbs., except that no increase shall be made in rates on ex-lake ore that has paid increased all-rail rate before reaching lake vessel. The increase of 30c. shall be added to tariffs in force prior to March 15, 1918, and the increases since allowed by the Board of Railway Commissioners struck out.
Stone, artificial and natural, building and monumental, except carved, lettered, polished, or traced	2 cents per 100 lbs.
Stone, broken, crushed and ground	1 cent per 100 lbs.
Sand and gravel	1 cent per 100 lbs.
Brick, except enamelled or glazed	2 cents per 100 lbs.
Cement	2 cents per 100 lbs.
Lime and plasters	1½ cents per 100 lbs.
Lumber and other forest products not otherwise herein specifically dealt with	A flat rate of 1c. per 100 lbs. to be added to the tariffs in force prior to March 15, 1918, and the rate so obtained to be then increased by 25 per cent., but not exceeding 5c. per 100 lbs.: the increase since granted by the Board of Railway Commissioners to be disallowed.

Commodities.	Increases.
Pulpwood	25 per cent., but not exceeding an increase of 5c. per 100 lbs.
Cordwood, slabs, and mill refuse, for fuel purposes	1c. per 100 lbs.
Wheat	By striking out the limitation imposed of 2c. per 100 lbs. in the increase allowed by the Board of Railway Commissioners, effective March 15, 1918, and adding 25 per cent. increase, but not exceeding 6c. per 100 lbs.
Other grains, flour and other milled products	To be increased to the new wheat rates.
Live stock	25 per cent., but not exceeding an increase of 7c. per 100 lbs. where rates are published per 100 lbs., or \$15 per standard 36-foot car where rates are published per car.
Packing-house products and fresh meats	25 per cent.
Bullion, base (copper or lead), pig or slab, and other smelter products	25 per cent.
Sugar, syrup, and molasses	By cancelling existing commodity rates and applying the fifth-class rate as increased hereunder.
Ice	25 per cent., calculated on tariffs in effect prior to March 15, 1918. Increase since allowed by the Board of Railway Commissioners to be disallowed.

(b) Commodity rates not included in the foregoing list shall be increased 25 per cent.

(c) In applying the increases prescribed in this section, the increased class rates applicable to like commodity descriptions and minimum weights between the same points are not to be exceeded.

TERRITORY WEST OF FORT WILLIAM.

Class Rates.

(a) All class rates shall be increased 25 per cent., calculated on the tariffs in force prior to March 15, 1918; the increases since allowed by the Board of Railway Commissioners to be disallowed.

Commodities.	Increases.
Coal and coke	Rates to be increased as rates on these commodities are increased hereunder in eastern territory.
Ores, iron	Rates to be increased as rates on these commodities are increased hereunder in eastern territory.
Ores, other	On ores not exceeding in value \$25 per net ton, 1c. per 100 lbs.; on ores valued over \$25 to \$50, 2c. per 100 lbs.; on ores valued over \$50 to \$100, the 10th class rates of the merchandise distributing scale, as increased hereunder, shall apply; on ores over \$100 in value the 10th class rates of the merchandise standard scale, as increased hereunder shall apply.
Stone (artificial and natural), building and monumental, except carved, lettered, polished, or traced	By the addition of 2c. per 100 lbs. to the tariff in force prior to March 15, 1918; the increases subsequently granted by the Board of Railway Commissioners to be disallowed.
Stone, broken, crushed, and ground; also sand and gravel	By the addition of 1c. per 100 lbs. to tariffs in force prior to March 15, 1918; the increases since allowed by the Board of Railway Commissioners to be disallowed.
Brick, except enamelled or glazed	By the addition of 2c. per 100 lbs. to the tariffs in force prior to March 15, 1918; the increases since granted by the Board of Railway Commissioners to be disallowed.
Cement	2c. per 100 lbs.

Commodities.	Increases.
Lime	1½c. per 100 lbs. on the tariffs in force prior to March 15, 1918; the increases since allowed by the Board of Railway Commissioners to be disallowed.
Lumber	25 per cent., but not exceeding an increase of 5c. per 100 lbs.
Grain and grain products to Fort William and Port Arthur	By the addition of the increases granted under the McAdoo order for similar mileages in adjacent American territory, to the rates in effect prior to March 15, 1918. Where more than one tariff of an American carrier in an adjacent State exists, the rate increase shall be that allowed on the lowest normal rate for the same or similar mileages in such contiguous territory under the McAdoo order; the increases since granted by the Board of Railway Commissioners to be disallowed. Provided that the rates on said products shall not be greater from the city of Edmonton than from the city of Calgary.
Grain and grain products between local points and to the Pacific Coast	By the addition of 25 per cent., but not exceeding an increase of 6c. per 100 lbs. to tariffs in effect prior to March 15, 1918, and by disallowing the increases since made by the Board of Railway Commissioners.
Live Stock	By the addition of 25 per cent., but not exceeding an increase of 7c. per 100 lbs. where rates are published per 100 lbs., or \$15 per standard 36-foot car where rates are published per car; increases to be based on tariffs in effect prior to March 15, 1918, and the increases since allowed by the Board of Railway Commissioners to be disallowed.
Packing-house products and fresh meats	By the addition of 25 per cent. to the tariffs in effect prior to March 15, 1918, and increases since allowed by the Board of Railway Commissioners to be disallowed.
Bullion, base (copper or lead), pig or slab, and other smelter products	Rates from British Columbia smelters to Toronto and Hamilton to take the rates from the contiguous American smelting and shipping point, namely, Northport, Wash., to Buffalo, viz., 71½c. per 100 lbs., Montreal to take the New York rate of 81½c. per 100 lbs. Rates to Canadian points, other than points in eastern Canadian territory, to be advanced 25 per cent. Rates on zinc for domestic consumption to be the same as on copper and lead.
Sugar, syrup, and molasses	To be made on the basis and principle adopted hereunder for eastern territory.

(b) Commodity rates not included in the foregoing list shall be increased 25 per cent., calculated on the tariffs in force prior to March 15, 1918, and the increases since authorized by the Board of Railway Commissioners to be cancelled.

(c) In applying the increases prescribed in this section, the increased class rates applicable to like commodity descriptions and minimum weights between the same points are not to be exceeded.

TERRITORIES BOTH EAST AND WEST.

Minimum Charges.

(a) After the increases hereunder made in class rates, no rates shall be applied on any traffic moving under class rates lower than the amounts in cents per 100 lbs. for the respective classes as follows:

Classes:	1	2	3	4	5	6	7	8	9	10
Rates:	24	21	18	15	12	11	9	10	10	7½

(b) The minimum charge on less than carload shipments shall be as provided in the Canadian Freight Classification, but in no case shall the charge on a single shipment be less than fifty cents.

(c) Class rates. Increases.

Class rates between eastern and western points That portion of the rate applicable to eastern territory to be increased 25 per cent., and that portion applicable to western territory, 25 per cent., based on the rate in effect prior to March 15, 1918. The advances subsequently allowed by the Board in western territory shall be disallowed

Commodities.	Increases.
Commodity rates between eastern and western points	On that portion of the rate applicable to eastern territory, the appropriate increase granted hereunder for the commodity for local movements in eastern territory; and on the western portion, the appropriate increase granted hereunder for the commodity for local movement in western territory. The advances allowed by the Board of Railway Commissioners in western territory, effective March 15, 1918, shall be disallowed.
(d) Import rates	To be increased, subject, as a maximum, to the lowest rates obtaining from Baltimore or any North Atlantic seaport in the United States to the same destinations, except that the rates from Halifax shall be increased so as to continue on the present relative basis.

(e) DISPOSITION OF FRACTIONS.

In applying rates, fractions shall be disposed of as follows:

- (1) Rates in cents or in dollars and cents per 100 pounds or per package.
 - Fractions of less than ¼ or 0.25 to be omitted.
 - Fractions of ¼ or 0.25, or greater, but less than ¾ or 0.75 to be shown as one-half (½).
 - Fractions of ¾ or 0.75, or greater, to be increased to the next whole figure.
- (2) Rates per ton:
 - Amounts of less than five cents to be omitted.
 - Amounts of five cents or greater, but less than ten cents, to be increased to ten cents.
- (3) Rates per car:
 - Amounts of less than twenty-five cents to be omitted.
 - Amounts of twenty-five cents or greater, but less than seventy-five cents, to be shown as fifty cents.
 - Amounts of seventy-five cents or greater, but less than one dollar, to be increased to one dollar.

OBSERVANCE OF DIFFERENTIALS.

(f) In establishing the freight rates herein ordered, while established rate groupings and fixed differentials are not required to be used, their use is desirable, if found practicable, even though certain rates may result which are lower or higher than would otherwise obtain.

(g) All schedules, viz., tariffs and supplements, published under the provisions of this order shall bear on the title-page the following in bold-face type:

"This schedule is published and filed on one day's notice with the Board of Railway Commissioners for Canada, pursuant to Order in Council No."

The Board of Railway Commissioners shall obtain from the three larger railway systems, that is to say, the Grand Trunk, Canadian Pacific and Canadian Northern Railway Companies, the results of railway operation per month, and report on the same monthly to His Excellency in Council, through the Minister of Railways and Canals, to the end that, should the earnings of the said companies under this Order be greater than the sum required to meet increased costs and permit transportation to be properly and efficiently carried on, the appropriate reductions in the rates fixed hereunder shall be made. The said reports and the books, accounts and records upon which the same are based shall be subject to examination and audit by the Government of Canada, under such regulations as may hereafter be prescribed by the Governor in Council.

The provisions herein, the rates herein prescribed, shall be effective, if filed with the Board of Railway Commissioners, as and from the 1st day of August, 1918, and shall remain in force for the duration of the present war and until further ordered, subject to the provisions of the section next preceding. Increase of rates may become effective after the 12th day of August, 1918, and as and when filed.

(Signed) RODOLPHE BOUDREAU,
Clerk of the Privy Council.

These rates take effect on Aug. 12th.

At the liquidator's sale of the property and assets of the Hought Paper Mills Co., Camden East, Ontario, the successful tenderers were the Bathurst Lumber Co., Bathurst, N.B., who offered \$67,500 for the property. The Hought Paper Mills were engaged in the manufacture of wrappings and Kraft paper.

War Measures Restrictions Extended

Restrictions on Exports and Imports Extended to Include the United States List of Commodities

In addition to the long list of restricted exports applied as war measures at the request of the British authorities, this country has now extended these war measures restrictions on exports and imports so as to include in our restrictions the commodities named in the United States restrictions against imports and exports. However, the new restrictions on imports do not apply against importations into Canada from the United States. This latter fact is set out in Customs orders to Collectors of Customs, dated July 18th and 31st, 1918 (Memos. 2226 B, and 2230 B). Full particulars on war measures restrictions, and the forms prescribed for use where license is sought for, may be obtained from the Tariff Department of the Canadian Manufacturers' Association.

Board of Customs Decisions

Rulings as to Duty Chargeable on Various Articles on Which Questions Have Been Raised

Motors for use in operating addressograph machines declared to be dutiable under item 453.

Transparent advertising window signs, per sample, declared to be dutiable under tariff item 178.

Declared that ball mills and tube mills and the steel balls used therein are dutiable under tariff item 453, whether the ores, quartz or other materials, ground or crushed in the mill, be treated by the cyanide process or not.

Declared that Sorensen tankless air compressor, per catalogue of Sorensen Company, New York, is dutiable under

tariff items 696 and 466 (a), except the motor, which is subject to duty under tariff item 453.

Declared that Canadian rubber tires, exported and returned to Canada, fitted on the wheels of automobiles, bicycles, motor cars, wagons or other vehicles, are subject to duty when returned to Canada in condition as stated above.

Declared that dynamometer, on application of the University of Toronto, is dutiable under tariff items 466 (a) and 696.

Ster-I-Foam from Reynolds Corporation, Bristol, Tenn., Va., and Sani-Flush from the Hygienic Products Co., Canton, Ohio, both being powders for cleaning toilet bowls, rated under tariff item 220 (a).

Printed matter intended for publication and consigned to newspapers or publishers in Canada, classed as manuscript, and may therefore be admitted free of duty under tariff item 177.

Mops or mop heads, manufactured from cotton yarn, irrespective of size of yarn, rated for duty under tariff item 537, as manufactures of cotton, in effect from 1st May, 1918.

Atlasette ribbon, consisting of cotton threads or fibres stuck together side by side, imported in narrow strips for tying candy boxes, etc., dutiable under tariff item 582. Ruling in effect from 1st May, 1918.

Dry batteries, having passed into possession of importer, not entitled to be treated as goods not according to order, under Memo. 1469-B, if subsequently exported.

Wilson's Corega, manufactured by the Corega Chemical Co., Cleveland, Ohio, a powder for holding dental plates in the mouth, dutiable under tariff item 220 (a).

Johnson's powdered wax for dancing floors, from S. C. Johnson & Co., Racine, Wis., dutiable under tariff item 252.

CORRECTION.—Appraiser's Bulletin No. 1746, 11th June, 1918, ruling on printed matter for newspapers to be classed as manuscript,—after the words "printed matter" add, "Not of an advertising nature."

FOREIGN TRADE OF CANADA

(Comparison 1916, 1917 and 1918.)

IMPORTATIONS.

Month of June.	1916.			Three Months Ending June.		
	1916.	1917.	1918.	1916.	1917.	1918.
Dutiable Goods	\$36,765,226	\$51,761,825	\$44,100,392	\$105,534,477	\$153,027,945	\$136,740,899
Free Goods	29,634,312	45,753,242	37,994,394	80,710,703	138,891,310	114,650,660
Total	\$66,399,538	\$97,515,067	\$82,094,786	\$186,245,180	\$291,919,255	\$251,391,559
Duty Collected	\$12,105,268	\$15,329,381	\$13,426,381	\$34,992,407	\$46,287,690	\$42,250,761

EXPORTATIONS.

Month of June.	1916		1917		1918	
	Domestic.	Foreign.	Domestic.	Foreign.	Domestic.	Foreign.
The Mine	\$7,755,875	\$51,886,013	\$4,961,037	\$11,028	\$7,077,347	\$262,656
The Fisheries	1,267,883	4,450	1,185,376	24,143	1,909,780	9,102
The Forest	5,846,672	.....	5,451,576	16,422	8,048,894	1,808
Animals and their Produce	8,473,780	674,398	7,331,668	234,480	12,439,058	346,199
Agricultural Products	38,744,527	775,273	57,869,423	1,382,629	27,231,125	93,252
Manufactures	32,252,447	886,196	39,021,170	1,932,501	51,092,967	1,341,208
Miscellaneous	1,294,678	120,977	465,591	124,121	710,617	184,349
Total Merchandise	\$95,635,862	\$54,347,307	\$116,285,841	\$3,725,324	\$108,509,788	\$2,238,574

EXPORTATIONS.

Three Months Ending June.	1916		1917		1918	
	Domestic.	Foreign.	Domestic.	Foreign.	Domestic.	Foreign.
The Mine	\$17,746,165	\$62,556,852	\$15,174,119	\$46,148	\$18,276,866	\$675,412
The Fisheries	3,576,132	7,159	2,939,218	50,206	4,122,668	41,154
The Forest	12,308,649	26	12,920,035	24,132	18,665,671	33,378
Animals and their Produce	19,873,505	1,179,659	24,223,167	655,389	25,432,562	689,454
Agricultural Products	107,484,254	979,389	141,105,607	2,737,248	81,502,062	327,556
Manufactures	81,560,002	1,932,331	132,830,441	4,696,135	108,740,251	3,556,927
Miscellaneous	2,832,328	334,316	1,295,939	544,990	1,933,399	329,897
Total Merchandise	\$245,381,035	\$66,989,732	\$330,488,526	\$8,754,248	\$258,673,479	\$5,653,778

Ruling as to Structures

Board of Railway Commissioners Issues Order Covering Erection of Buildings, etc., Adjoining Railway Tracks

The following extract from General Order No. 236 of the Board of Railway Commissioners for Canada is published for the information of manufacturers.

7. (a) All open drains crossing tracks in railway yards shall be safely covered for at least five feet from the gauge side of each rail, except in times of flood, when temporary open drains may be provided if necessary.

(b) No semaphores, signals, poles, high or intermediate switchstands, or piles of material, erected or placed in future, shall be nearer than six feet from the gauge side of the nearest rail.

(c) No structure, except mail cranes, which shall be erected and maintained as directed by Order of the Board No. 5647, dated November 20th, 1908, over four feet high shall hereafter be placed within six feet from the gauge side of the nearest rail without first obtaining the approval of the Board.

(d) Water stand-pipes shall not be nearer than two feet and six inches from the widest engine cab, and the spout of the stand-pipe shall, when not in use, be fastened parallel with main track, and enginemen are required to see that this is done after using any such pipe.

8. Every person or company offending against any of the foregoing provisions shall forfeit and pay the sum of fifty dollars (\$50.00) for every such offence.

Tracing Telegrams

Railways Are Now Charging Shippers for Telegrams Sent in Response to Requests for Tracing

The following is a copy of the bulletin issued by the Canadian Railway War Board instructing member roads to send all telegraphic replies to the public "collect," instead of prepaying them:

"While the telegraphic departments of the railways are already short of operators and face the possibility of losing a great many more men under the Military Service Act, to say nothing of the hundreds of clerks no longer available on the clerical staffs, a heavy volume of work is laid upon the railways in the tracing of shipments between the shipper and consignee.

The Canadian Railway War Board fully appreciates the right of railroad patrons to such information, but finds it desirable, in order to conserve railway man-power, to take steps to eliminate unnecessary tracing by placing upon the person enquiring the cost of telegraphic enquiries and replies.

The Board, therefore, has directed that member roads shall send all telegraphic replies to the public "collect," or by mail, instead of prepaying them, as has been the practice heretofore, and shall accept no wires of this nature unless prepaid."

Flag Stations

Copy of Judgment Rendered by Railway Board in Matter of Petition Associated Boards of Trade

The following decision was recently given by the Board of Railway Commissioners of Canada in the matter of the complaint of the Ontario Associated Boards of Trade, complaining of insufficient and inadequate facilities furnished by railway companies for the receiving and delivering of freight at flag stations:

"Upon hearing the complaint at the sittings of the Board, held in Hamilton, October 22nd, 1917, in the presence of coun-

sel and representatives for the complainants, the Grand Trunk, the Canadian Pacific and the Canadian Northern Railway Companies and the Michigan Central Railroad Company, the evidence offered and what was alleged, and reading the written submissions filed on behalf of the interests affected—

"It is ordered that every railway company subject to the jurisdiction of the Board, be, and it is hereby directed to provide its agents with rubber stamps reading as follows:

UNLOADED WITHOUT EXCEPTION,
EXCEPT AS NOTED.

.....
Conductor.

Date.....

and to issue a bulletin:—

(a) Requiring agents issuing way-bills for shipments of less than carload freight destined to flag stations to place the above stamp thereon;

(b) requiring conductors in charge to unload such freight on the platform at the flag station after the train has been brought to a full stop, and wherever shelters have been provided to place such freight therein, and to certify, as above, on the way-bill;

(c) requiring conductors who have unloaded freight at flag stations to deliver the way-bill therefor at the first agency station reached by the train after the unloading of such freight;

(d) Notifying such conductors that they will be held responsible for the proper carrying out of the requirements set forth in this Order and as covered by the said bulletin;

(e) requiring the agent at the first agency station reached by the train after the unloading of the freight, as in this Order provided, to notify the consignee of the arrival of such freight by postal notice mailed within 24 hours after receiving the way-bill from the conductor.

(Sgd.) H. L. DRAYTON,

Chief Commissioner,

Board of Railway Commissioners for Canada.

Fire Prevention League

Provincial Government of Ontario Sends Out Call for a Conference to be held on August 30

A meeting for the purpose of forming a Provincial Fire Prevention League has been called for August 30th by the Premier of Ontario, Sir William Hearst. In sending out an invitation for representatives of various bodies to be present, Sir William says:

"It is now generally recognized, by thinking men and women, that the fire wastage in the Province of Ontario, as well as throughout the Dominion, is a serious drain on our national wealth and resources.

"It is conceded with equal candor that something must be done, and done in an efficient and comprehensive way, to check the enormous losses for the payment of which we are all contributing either directly or indirectly.

"Education—of both young and old, in all walks of life—on fire prevention lines is of paramount importance. Concerted action is sought so that after full discussion it may be possible to adopt ways and means of preventing the origin and spread of fires, with its accompanying loss of life.

"With these thoughts in mind, I am calling a meeting of representatives of organizations most vitally interested, for the purpose of forming a 'Provincial Fire Prevention League' (which will be affiliated with the Provincial Fire Marshal's Department) to foster and promote such propaganda as shall be decided upon, and arrange for the proper observance of October 9th as Fire Prevention Day, which day has been adopted by general consent for this purpose throughout North America.

"It is proposed to hold this meeting in the Parliament Buildings, Toronto, on Friday, August 30th, 1918. I would ask you to kindly co-operate in this important work, and, if convenient, attend the meeting."

Catalogues and Booklets

Oxy-Acetylene Welding

One of the handsomest catalogues that has come to hand recently is that of L'Air Liquide Society, describing their Oxy-Acetylene welding and cutting apparatus and supplies. It is attractively designed, with striking cover design, is printed on heavy coated stock in brown-toned ink and is well illustrated.

Several pages at the front of the book are devoted to an explanation of the process itself, which is becoming of increasing importance and value in industry and proving an indispensable factor in all branches of metal working. This is followed by an account of the service which the Society is prepared to render through its four Canadian factories at Montreal, Toronto, Winnipeg and Halifax, while the rest of the book is filled with descriptions of apparatus and a number of illustrations showing what the oxy-acetylene process is capable of accomplishing.

"In preparing their catalogue," state L'Air Liquide Society, "we have departed somewhat from the usual method by giving a necessarily curtailed, but we trust comprehensive, outline of the Oxy-Acetylene process of welding and cutting and its many useful and indispensable applications. It also mentions the chief characteristics that have made "A.L.S." apparatus so popular in Canada for all purposes in welding and cutting.

"We have during the past few months had many applications from your readers for a catalogue of our apparatus and probably some of them have been disappointed in not receiving a copy, but owing to extreme pressure of business and the enormous demand made upon us for our products we did not feel justified in making an attempt to sell that which we might have difficulty in supplying. As, however, we have now more than doubled our output we shall in future be in a better position to deal with any new business that may come our way."

Anyone interested in the Oxy-Acetylene process may have a copy of this instructive catalogue by writing for one to L'Air Liquide Society.

The "How" of Auditing

Auditing Procedure. By William B. Castenholz, A.M., C.P.A.
Chicago: La Salle Extension University.

Auditing is the analysis of business transactions. In the minds of some business men the definition stops there, but among progressive men who understand the tendencies of the times, auditing is regarded as a constructive science. The modern auditor first analyzes and then combines. In other words, he not only detects what is faulty, but constructs a programme of greater efficiency. This is clearly illustrated by the new book, "Auditing Procedure," by William B. Castenholz, A.M., C.P.A. It is well planned to give the professional accountant the broad and accurate knowledge which enables him to do constructive work.

A number of books have been written on auditing theory. This one is a manual of *procedure* which tells the practitioner not only what accounts must be audited, and why, but *how*. The book stands out by itself as a working manual, and discusses fully the steps which must be taken by an auditor in verifying the balance sheet, and profit and loss accounts. It treats in this illuminating and practical way the audit of balance sheet accounts, of income accounts, of expense accounts, of municipal accounts, the mechanical or detailed side, the auditor's report, and various miscellaneous matters. Of special interest to the practical accountant will be the

detailed treatment of special businesses such as railroads and other public service companies, financial institutions, insurance companies, publishers, timber companies, breweries, mines, branch accounts, department stores, contractors, professional men, oil mills, textile mills, and automobile manufacturers.

The accountant is given a direct help in the innumerable practical problems which always arise. He will find discussions of such topics as the valuation of inventories, the reserve for doubtful accounts, how to show notes receivable discounted securities, depreciation as an operating cost, the valuation of goodwill, deferred charges, short cuts for verification of cash, the determination of net worth, what to include in the surplus account, safeguarding the pay roll, etc.

A New House Organ

For several months now the Alaska Bedding of Montreal, Limited, have been publishing a monthly magazine with the title, "The Alaskan." It is described as "published in the interests of Alaska dealers for bigger business in beds and bedding." While primarily a house organ, this little publication—which, by the way, runs sixteen pages a month—has several features of interest over and above those contents devoted specially to Alaska products. There are always several good general business-building articles, quite a number of short, pithy "success" paragraphs, and numerous useful business hints. The personal note is also present, and sketches of successful furniture men are included. Being handsomely printed on fine coated paper, "The Alaskan" is an attractive publication, and should prove a welcome monthly visitor among the customers of Alaska Bedding, Limited.

Lumber Trade Directory

A B C Directory and Year Book of Lumber Trade of B.C.
Cloth, 136 pp. Progress Publishing Co., Ltd., Vancouver. \$2.00.

The 1918 edition of the "A B C Lumber Trade Directory of British Columbia," just off the press, is a valuable addition to the desk of the business man. The directory section of the book contains an alphabetical list of every lumber and shingle mill in British Columbia, with details of the management, capital, date of establishment, products and capacity of the plant; a classified list of firms manufacturing various commodities in the lumber industry; an up-to-date list of the logging operators throughout the province; lists of timber cruisers, log brokers, lumber wholesalers, towing companies and similar information.

A second section of the book, of particular interest to the lumber industry, gives details of the Customs tariffs of various countries, showing the duties on lumber and wood materials, lists of lumber importers in foreign countries, and other information of use in the export lumber business.

Another section of the book gives the full text of all the legislation dealing with the lumber industry in British Columbia in such form that it is not necessary to make cross references to the various acts, the publishers having consolidated the legislation and amendments to the Forest Act.

Another section gives a mass of technical and statistical information regarding the various woods of British Columbia, showing their strength, values, volume tables and other information of that nature, and also comparative statistics of the production of the industry in much detail. There is also a complete table showing the fees and royalties payable for the various licenses and leases, and information regarding timber marks and log marks. A useful buyers' guide is included in the book, being a directory of mill and camp supply houses, which should prove of use to lumbermen.

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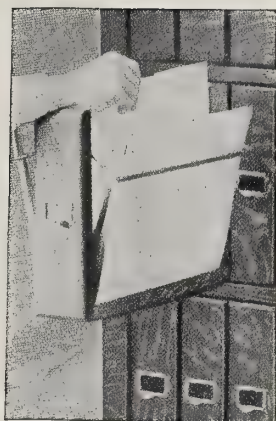


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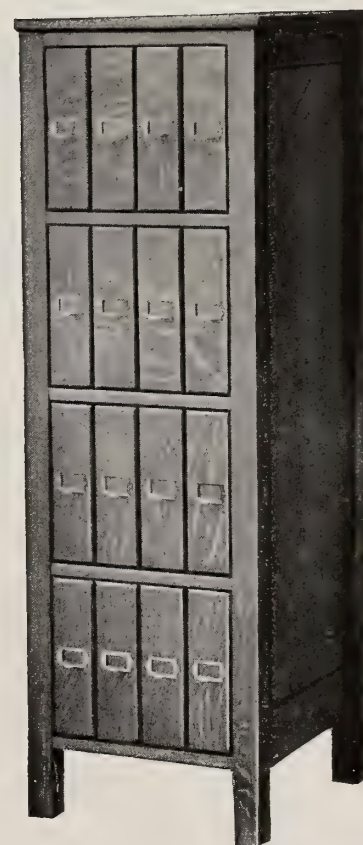
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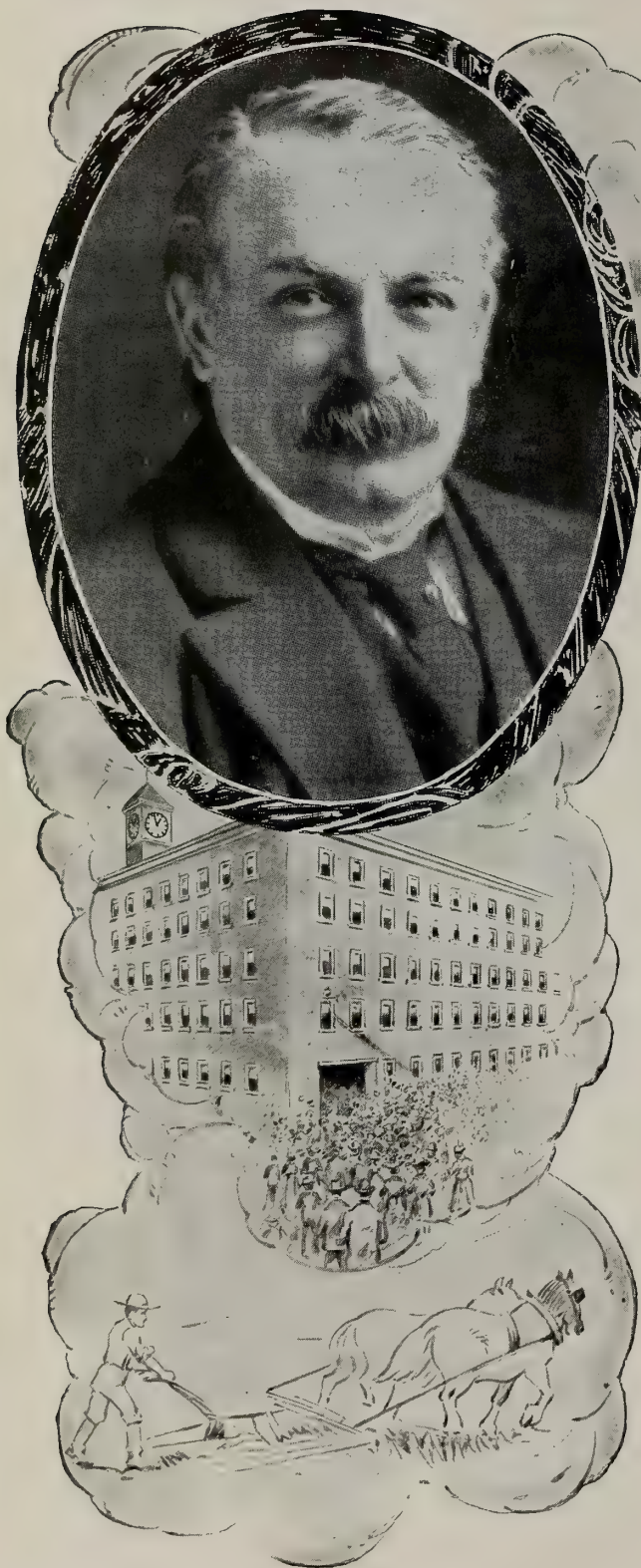
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Here is what Lloyd George says about the value of Time. Surely he is absolutely right on this tremendous question.

"Time—time is a hesitating and perplexed neutral. He has not yet decided on which side he is going to swing his terrible scythe. For, at the moment, that scythe is striking both sides with fearful havoc. The hour will come when it will be swung finally on one side or on the other.

"Time is the deadliest of all the neutral powers. Let us see that we enlist him among our allies. The only way to win time is not to lose time. You must not lose time in the Council Chamber; you must not lose time in the departments which carry out the decrees of the Council; you must not lose time in the field, in the factory, or in the workshop.

"Whoever tarries when he ought to be active—whether it is a statesman, a soldier, an official, a farmer, a worker, a rich man with his money—is simply helping the enemy to secure the aid of the most powerful factor in the war—time. Act, and act in time. That is our appeal to you."

These are strong words. They come from one of the master minds of the age—a man who has always realized the value of Time. These words should go home to readers of *Industrial Canada*. Time is also vitally important to you and the big industries you are connected with.

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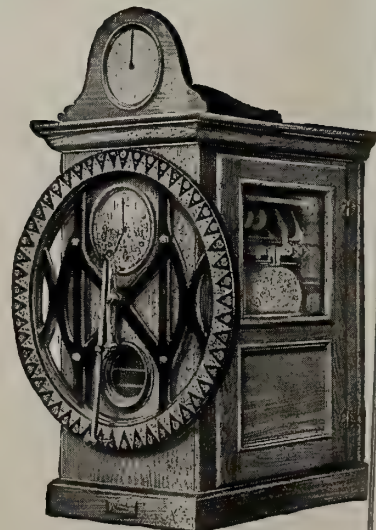
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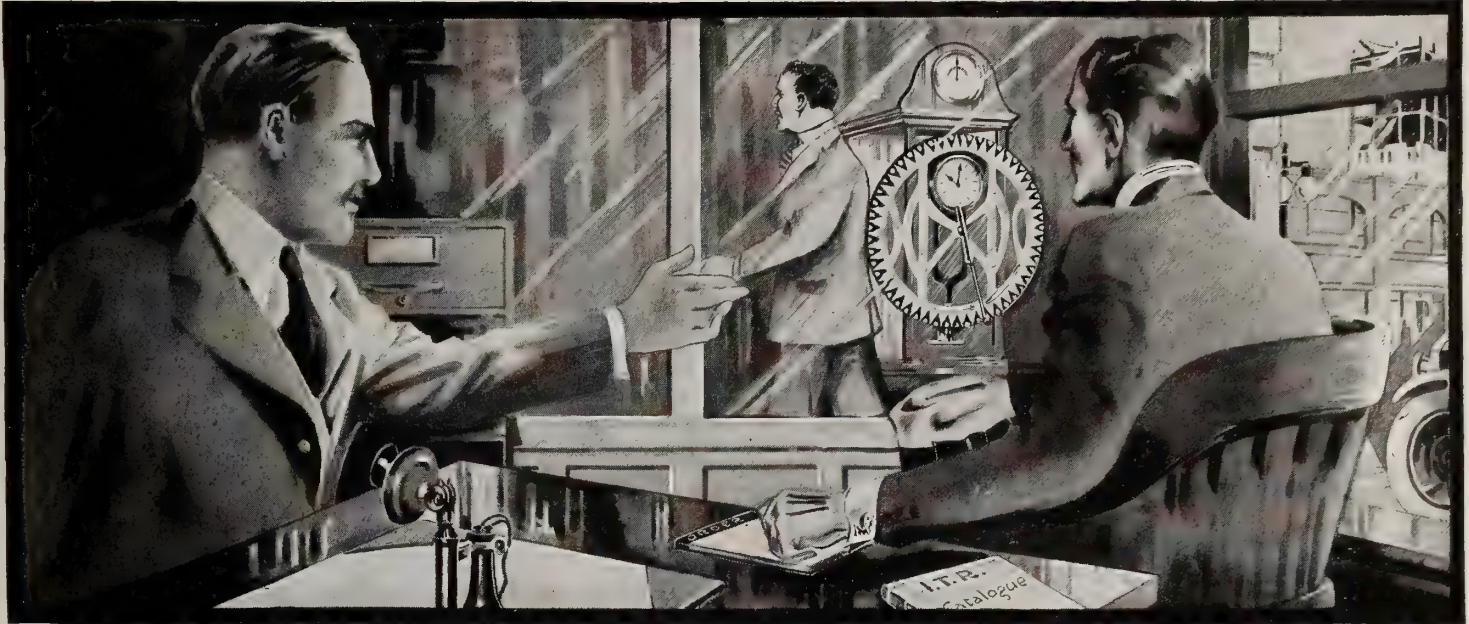
(TIME RECORDER DIVISION)

FRANK E. MUTTON, Vice-President and General Manager
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"There's an Insurance Policy on our Profits, and it pays its own Premiums"

"That Time Recorder you see out there solved one of our biggest problems—it eliminated working-time disputes with our men. It meant absolute satisfaction to our employees, because it is the fairest of all time-keeping systems."

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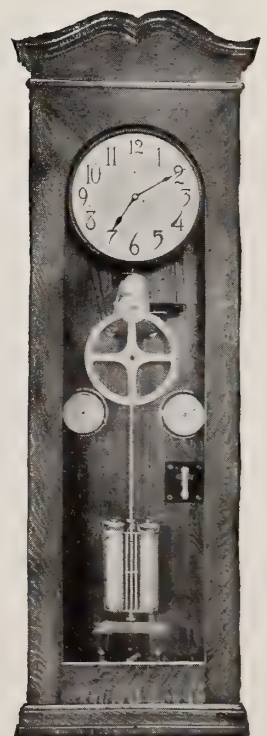
Let your employees feel that your Time-keeping methods are right and up-to-date.

When you realize that in the majority of cases labor represents from 50% to 75% in the cost of production, the value of time to the employer can be easily appreciated.

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OFFICE AND FINANCE

Acceptance Remedy for Shortage of Capital

The Taking of a Trade Acceptance is Merely the Placing of a Company in Possession of a Medium of Exchange Which it Can Convert Readily, Whereas it Formerly Held an Open Account, Which Could Not be Converted Readily

By FRANK G. SMITH

Vice-President, First and Old Detroit National Bank

(Reprinted from the "Michigan Manufacturer and Financial Record")

ONE of the greatest evils of present-day financing is the practice of borrowing capital as a permanent and fixed policy. By this, we do not mean the borrowing of money by an individual to invest in a business venture, or the borrowing by a company for its ordinary business requirements to meet its bills or accounts payable, but the practice of borrowing money by a business for capital instead of temporary uses.

As an example, it is not unusual to witness a company embarked in a manufacturing enterprise with a very moderate paid-in capital, and with the view of producing an article of practically unknown possibilities for sale, at the same time depending for its future acceptance very largely on the reception given by the credit department of its prospective creditors.

Competition in trade, future prospects of the company and the arguments of "new business" are used as a wedge to obtain an advance beyond which the concern is entitled. Success in such an effort will bring temporary relief and help to the venture, but in many cases it reacts to their detriment rather than to their benefit.

Must Expand Credit Purchases

The tendency to expand and take on added business offerings compels the manufacturer likewise to expand his credit purchases of equipment and raw material, either of which must carry with it an increasing pay-roll. All goes well until the settlement day approaches.

We will say that perhaps the market for the article to be manufactured is composed of firms in first-class standing and credit, with a reputation for discounting their bills regularly. Business conditions, which could not be foreseen, develop; perhaps, a tight money market, a backward season, poor weather conditions or foreign complications develop. Business sags off, and while the product is satisfactory, deliveries are held back, bills pass the discount date without payment and purchasers take the full time on accounts. Future deliveries are held up for future dating. Your new project finds itself with debts fast maturing; machinery contracts partly paid; raw material arriving on track, contracts and bills for same to be met. Many times such a situation develops so rapidly that a new business will find itself with not enough ready funds to meet its weekly pay-roll. Their banker is then called upon to assist and endeavor to ease them over the difficulty and see that their labor is paid. If their bank is disposed to help them, their pay-roll is forthcoming. If, however, the bank is not willing to make this advance, it is necessary for the individual

stockholders, perhaps, to take access to their personal bank accounts to supply sufficient funds to keep the wheels going.

Now, all this could have been avoided had the company looked far enough into the future to have foreseen the obligations to be met, and to have realized that the circle of its operations must be complete before it can be said to have become an established business.

Directors May Endorse Credit

We will say, in the second instance, a concern starting with a moderate capital has names of worth connected with its management. While such names add standing to the company, they do not benefit the organization unless they take an active part in its affairs. It may be that while the members of such management are not disposed to invest their funds as permanent capital, we will say they are willing and ready to indorse or guarantee a liberal line at bank for the company's use, the idea being to enable it to operate on a basis much larger than its paid-in capital would allow.

The company increases the scope of its operations; the business grows and the line of credit arranged for at bank, which apparently at the start was considered ample, now becomes thoroughly inadequate to meet the requirement, and of need must be increased. This is accomplished, although perhaps the guarantors are not unanimous in the action, some of them demurring, not being in accord with the majority. However, objections are withdrawn, and the new line is granted. The concern goes merrily on with this added capital, turning out its manufactured product, which, we will say, has met a favorable reception in the trade. The volume was satisfactorily increased; new orders are coming in and the future looks rosy indeed. However, goods should only be considered sold when they stay sold, and payment is made therefor.

Goods May Not Take

The line of manufactured product has been purchased by the wholesalers on terms which, we will say, are liberal, made to introduce the goods, or perhaps contingent in a way upon the success the article meets with the public. The retailer purchases from the wholesaler; places the goods upon his shelves and displays them. We will suppose that the article is put out in a very attractive way. However, for some reason it does not take with the public. Perhaps it is in competition with an old-established line which is hard to displace. The price may be right, the

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quality good or even better than that of its competitors. In fact, the goods may be all that the manufacturer, wholesaler and retailer claim for them. However, if the public does not buy and pay for them, they can hardly be called a permanent and satisfactory sale. If the retailer does not sell them, he does not buy a second time. In case the wholesaler cannot move them, he is not inclined to purchase more. Provided the wholesaler does not buy, the manufacturer cannot sell, and unless he is able to secure other markets, he cannot continue to manufacture. Granted he is successful in locating other markets, and finds wholesalers to handle his goods, he still has a serious problem confronting him. He is obliged to overcome the poor reception his goods have received from the first effort. This is without doubt the hardest hill to climb, as the seller has to overcome the prejudice existing against the article whose sale has not been a successful one.

One Cause of Receiverships

We will say that at this period in the operations additional funds are required for the second sale campaign. After deliberation, the management conclude to throw themselves on the mercy of their bank and ask for a further increase in their line of credit. The application is made and submitted to their banker along with a statement of the condition of the business, showing its operations for the period of the company's existence, and the results obtained.

The banker goes over the matter carefully; visits the plant; consults with the management as to the product and investigates in the trade as to the reception the company's product has received. After scrutinizing the transactions of the business, as reflected by the bank's record, the banker readily perceives, if he has not already done so, that the company is plainly lacking in invested capital, and is depending largely upon its borrowings to supply the same. The banker, therefore, decides, after deliberation and consultation with his board, to request the company either to build up its paid-in capital or reduce its bank loan. The company is not in possession of funds to pay down its loan, and the guarantors thereon, while willing to capitalize their liability as indorsers, do not wish to invest further. It is not likely that, having capitalized their indorsement upon the paper, they would be favorable toward lending their names to future advances. This situation creates a crisis in the company's affairs, which perhaps can only be met by a reorganization, entailing perhaps a change in management; sometimes a receivership; sometimes actual liquidation and the discontinuance of the business. All of this could have been avoided had the company from its inception confined its operations to the limits of its invested capital, and borrowed only for its temporary needs, extending its scope only as its capital warranted and was turned in its operations.

Trade Acceptance the Remedy

We will say, perhaps, that your company has not met with the setbacks heretofore enumerated, but is successful in all of these conditions to which we have referred. In a sense it is a thriving institution, although unless it is able to collect its accounts receivable, and in time to meet the needs of its own obligations, it is still in a not too independent position. Should it be carrying an excessive line of accounts receivable, and at the same time be borrowing its full line of credit at its bank a large part of the time, it is but borrowing to carry these accounts receivable, and not really for the absolute needs of its own require-

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PELEG HOWLAND, President

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ments. These requirements could be amply and easily met were the accounts receivable, instead of being carried as such—in an open credit account—converted into Trade Acceptances. Your company then has not increased its credit advance to its customer in any way, nor has it affected its credit arrangement with its client any way but beneficially. The taking of a Trade Acceptance is merely to put your company in possession of a medium of exchange which it can convert readily, wherein it formerly held an open account which could not be converted readily. The discounting of this Trade Acceptance enables your company to pay their debts without borrowing on its own account, and if necessary, without the aid of their bank in any way.

Bank May Establish Limit

We will say that the company's bank has put a limit on the amount of Acceptances or trade paper which they wish to cash for any one company, and do not wish to go above that fixed limit. Now, perhaps, this limit is not enough to allow the company to cash the Acceptances in the amount which they desire, and which is necessary to meet their accounts payable. They still can use their Trade Acceptances merely by indorsing same. The Acceptances can then be forwarded to those creditors to whom the company is in debt on open accounts, and granted that the makers are of sufficient credit rating, the Acceptances will be received and credited to the account. This is a practice which was in quite universal use twenty-five or thirty years ago when capital was not as easily procured as it is to-day.

We must presume, however, that the company has sufficient credit standing to negotiate its own Trade Acceptances with its creditors. If this is a fact, it should have no trouble in negotiating the Acceptance of another in good standing.

The institution, which, although of apparent ample capital for the requirements of its business, is obliged to seek the assistance of a note brokerage house for the necessary outlet for its paper, is in little better position than the borrower of capital. Such flotations cannot be considered otherwise than borrowed capital. The practice of procuring capital in such a manner has at times in the past proved hazardous, especially to manufacturing lines. Such borrowers are subject always to the shifting conditions of the money market, and this borrowed capital must of necessity be governed by changing conditions and by the success or failure of the broker to market the paper.

All This is Unnecessary

Now, all this, in a way, is unnecessary. If the borrower will place his business on an Acceptance basis, he will be enabled to discount his bills as promptly as ever. At the same time, he will be able to decrease to the minimum his line at bank, thereby creating a reserve to which he can have access at his pleasure in time of need. It goes without saying that it is understood that accounts which invariably discount their bills promptly would in no case be requested for an Acceptance. However, should the account pass the discount date, thus indicating that the debtor intended to take the limit of terms, a Trade Acceptance should be requested. In some lines it is quite customary to extend regular lines of credit to purchasers to be handled much in the same way as it would be handled in a line extended by a bank, the purchaser running this line of credit up and down as his needs demand. The seller, in this case, is indeed playing banker. Such procedure invariably leads the seller into the open market to carry these advances. The ability to float its paper in large amounts through brokers,

THE ROYAL BANK OF CANADA

INCORPORATED 1869

Capital Authorized	- - - - -	\$ 25,000,000
Capital Paid Up	- - - - -	14,000,000
Reserve and Undivided Profits	- - - - -	15,000,000
Total Assets	- - - - -	360,000,000

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SIR HERBERT S. HOLT, President
E. L. PEASE, Vice-President and Managing Director
C. E. NEILL, General Manager

520 Branches in Canada, Newfoundland, West Indies, Central and South America, etc., distributed as follows:

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Newfoundland	- - - - -	6	U.S.A. (New York)	- - - - -	1
West Indies	- - - - -	47	Great Britain (London)	- - - - -	1
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A good banking connection is an essential to the success of the manufacturer or merchant.

THE
CANADIAN BANK
OF COMMERCE

and thus obtain the necessities in a quick and easy manner is not all to the best interests of the company at times. As has been said before, too easy money often leads to expansion in lines of development which the borrower would perhaps best refrain from entering. Often the capital for the development of these extraordinary lines could be used to more benefit in lines of effort already established. Easy money often leads to trouble more quickly and more disastrously than the lack of it.

Company Husbands Resources

The company, starting with a limited capital, with proper management, husbands its resources, watches its accounts receivable, forces collections and is careful in its terms of sale. It endeavors to make every dollar count.

Here a word may be said in reference to a practice in force in many of our most successful and influential corporations in the manufacturing lines. Such companies depend in a large part upon much smaller companies for the manufacture of tools for their shop, patterns for their foundry and perhaps small parts used in the manufacture of their product. These small concerns of limited capital, perhaps with the larger part of that capital invested in machinery and equipment, are in no position to carry open accounts of considerable amounts. It is not unusual to witness, we will say, a million-dollar concern of large operations compel a smaller company of say \$25,000 capital to wait an extraordinary time, far outside of the terms of the sale when made, for the payment of what is due it. At the same time, your large corporation would discountenance and forbid the small contractor the privilege of pledging such an account and assigning same for credit with his bank. In many cases,

the assignment of an open account to bank for the benefit of small concerns, even were the funds themselves to be used to facilitate the production of the article manufactured for the benefit of the larger company, has led to threatened discontinuance of business relations by the larger company. Such a procedure, we should agree, is eminently unfair. Threatening to withdraw the business with which the small company is favored, and to divert it elsewhere, simply owing to the fact that limited capital necessitates the conversion of this account, is not only unfair but unjust, provided your smaller company is turning out a satisfactory article at an agreed price. If your larger manufacturer is well pleased with the product, is there any reason in the world why your large corporations should compel the smaller one to wait for payment beyond the terms of sale? While such a procedure is not general, it is practised, and we regret to say, quite extensively in these days, and especially so with large corporations who enjoy contracts for the manufacture of war material.

Should Help Small Neighbors

Now, the opposite should be the case. The large corporation holding such contracts should lend its strength, and in every way assist its smaller neighbor in its operations as far as he can do so without loss or inconvenience to himself. Especially so should this be done as a matter of patriotic service. The holder of a large war contract for the manufacture of any particular article for use in war business should have a community of interest with the manufacturer of every part which goes into that product, reaching to the man who makes the tools for the manufacture of the same. If we are not at this time in that position of close co-operation,

UNION BANK OF CANADA

Established 1865

Head Office, Winnipeg

Paid-up Capital.....\$5,000,000

Reserve Fund.....\$3,400,000

Total Assets over.....\$140,000,000

TO MANUFACTURERS AND EXPORTERS

who are reaching out for greater trade, over broader territory, the Union Bank of Canada offers a comprehensive banking service, complete and efficient. This service not only covers Canada, where we have over 305 Branches, but through the Foreign Exchange Department of our London (England), New York and Montreal Offices, and the Commercial Information Bureaus established at these Branches, it offers valuable assistance to Canadian Manufacturers who are selling Overseas.

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you may be sure that we will arrive there before this war is finished if we are to be successful in its prosecution.

If it will be of assistance to your small manufacturer, toolmaker, patternmaker, etc., to secure from your large manufacturer a Trade Acceptance for his account upon the discount date, if discount is not taken, it should be perfectly agreeable to the large manufacturer to furnish it. He should in every way lend himself to such an arrangement. It is certain he would do so, we are quite sure, if it could be brought to his mind the extent to which such a proposition would benefit both parties to the transaction.

No company which is being annoyed by financial difficulties and whose officers are obliged to divert their attention from their product to the question of finances, can produce as efficiently and satisfactorily as they could if they were relieved of such difficulties. The universal use of Trade Acceptances along these lines would entirely eliminate such conditions.

Now, this method of financing by Trade Acceptances is eventually to come into universal practice. While the borrower is encouraged to secure the Trade Acceptances for the open accounts due him, in like manner the debtor must be encouraged and advised to issue Acceptances in payment of his bills where the discount is not taken or cash payment is not deemed advisable. It would not be a great surprise if Uncle Sam should eventually, and at an early date, intimate to those institutions holding contracts for the manufacture of war material that it would be of benefit to the situation if the use of Trade Acceptances could be brought about. Such a procedure would go a long way to assist the liquidation of payables, and would place the small manufacturers, as well as the large ones, in a much more independent position. Changing conditions in the money market would not affect their production, and provided their accounts were good, they should at all times be in a position to meet their obligations as they became due. Borrowed capital would soon become a thing of the past.

Beauty in Bank Notes

Canadian Bank of Commerce Has Set in Circulation a Handsome New Series of Notes

A handsome new series of bank notes was placed in circulation last month by the Canadian Bank of Commerce. These are the fruit of several years of effort, during which time the bank sought to secure something both distinctive in character and beautiful in design. A year or more was lost in trying to secure an artist capable of creating the particular kind of design desired.

Notes will be issued in denominations of \$5, \$10, \$20, \$50, and \$100. The \$5 and \$10 notes are now ready, while the remaining notes will be put in circulation gradually during the next two or three years.

Some idea of the character and beauty of the issue may be gleaned from the following brief description. The face of the \$10 note consists of a vast pastoral landscape, a section of which is omitted in the centre for the purpose of containing the text of the note. At the left side is the figure of Juno with the bull, and at her feet Ceres offering the grain and fruits of the earth. Across the bottom of the note stretches a series of hills, and at the right a youth tends a flock of goats. The backs of all the notes of the series consist of a central group of Mercury and Ceres holding the British Crown over the seal of the Bank, the whole included in a frame of immortelles and other symbolic objects.

The Merchants Bank of Canada

Head Office, MONTREAL

Established 1864

Paid-up Capital	-	-	-	-	-	\$ 7,000,000
Reserve Funds	-	-	-	-	-	7,421,292
Total Deposits (May, 1918)	-	-	-	-	-	113,000,000
Total Assets (May, 1918)	-	-	-	-	-	144,000,000

President: Sir H. Montagu Allan, C.V.O.

Vice-President: K. W. Blackwell

Managing-Director: E. F. Hebden

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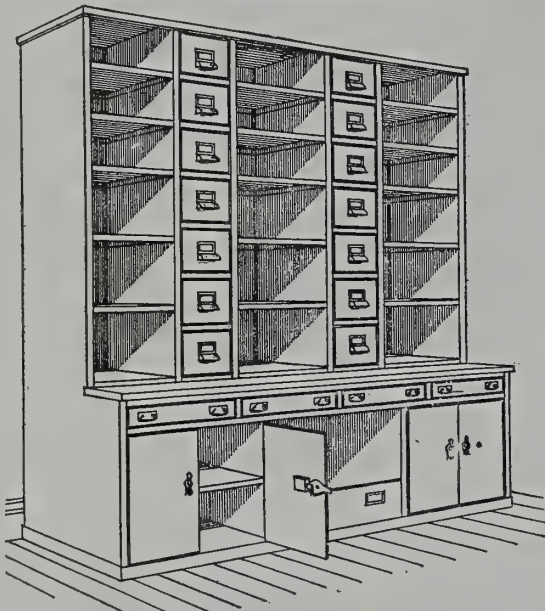
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Fine Showing Made by Merchants Bank

Expansion in All the Principal Items That Indicate Stability Coupled With Progressiveness

The statement of the Merchants' Bank of Canada for the year ended April 30th, 1918, gives clear indication of the rapidly increasing importance of this old-established institution among the chartered banks of Canada. There was an increase of total assets for the year of very nearly twenty million dollars, bringing the reserves of the bank up to \$140,937,544. Of this amount the large sum of \$76,194,016 is represented by current loans and discounts in Canada, showing what an important part the Merchants' is playing in providing funds for the industrial and commercial development of the country. In this item alone there was an increase of over thirteen millions during the year.

Another noteworthy item among the assets is the figure showing the bank's holdings of Canadian municipal securities, and British, foreign and colonial public securities, which has grown from \$11,263,196 to \$14,589,065 between 1917 and 1918. Dominion and Provincial Government securities also show the substantial growth of over a million and a half, or from \$3,862,507 to \$5,435,464.

On the side of liabilities it is interesting to observe how deposits have increased, and this despite the fact that during the year the floating of the Victory Loan called for the provision of large sums of money. Demand deposits notwithstanding have been enlarged from \$27,101,587 to \$34,886,747, while savings have gone up from \$65,000,484 to \$75,946,985. Profits shown amounted to \$437,973, as compared with \$421,292 for the preceding twelvemonth. Taken all in all, the results for the year are most gratifying, tending to increase the confidence of those who do business with the bank in its stability, good management and efficient service.

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Making Walking Safe for Employees

More Than Twelve Times as Many People are
Killed by Falls than Lose their Lives in Fires

Attention has been concentrated upon eliminating many types of hazards, and success has attended such efforts to a very great extent, says H. W. Mowery in a recent issue of *Safety News*. Millions of dollars are annually expended in making buildings fire-safe. Reinforced concrete, wired glass, kalamein doors and window frames are all desirable, but it is evident from the seriousness of the slipping hazard and the position that it occupies on our casualty list that we must have more action in an effort to make walking safe. More than twelve times as many people are killed by falls on stairs, floors and sidewalks as there are from burning buildings. Wherever people walk or work, every surface of cast iron or steel is a hazard, because a little oil, mud, soapy water, or even constant wear makes it dangerously slippery. Metals should not be used for tread surfaces unless there is embodied in the wearing surface some effective anti-slip material. Tile and terazza floors, because they are not properly cleansed, frequently will cause falls and casualties. Soap powders should not be used to clean such floors, but some sort of gritty cleanser. If the floor has already become slippery through the use of improper cleansers, it must be scoured and rinsed with warm water. By inspection of old structures and rigid supervision of new construction, slipping hazards may be eliminated, and it certainly is of vital importance to devote to this phase of accident prevention the serious consideration and unceasing attention it requires. Too much stress cannot be laid on the importance of using hand-rails on stairways. They are not there for ornamentation!

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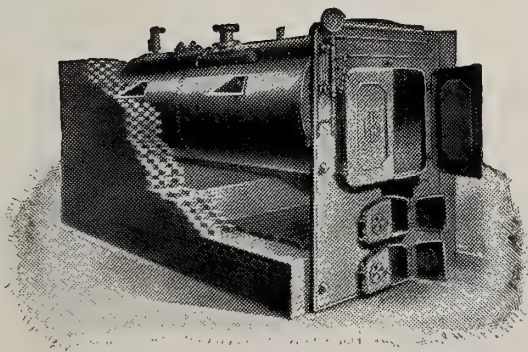
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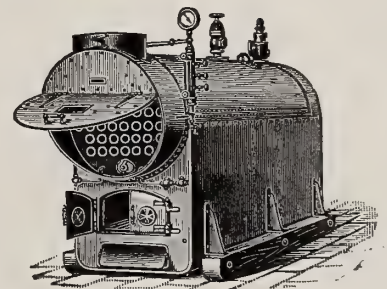
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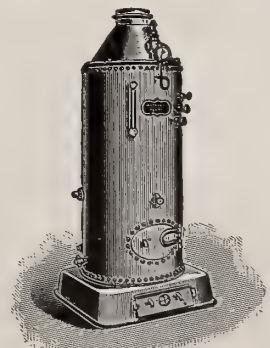
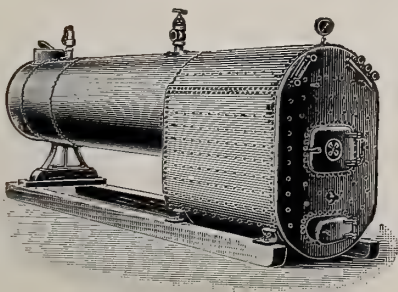


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Among the Industries

Under this heading are published items of news of current interest concerning the activities of Canadian manufactures. Information about changes of interest, enlargement of plants, and plans for future developments are always welcome, and are published free of charge, provided they should not be properly classified as advertisements

*Items prefixed with an asterisk are based on official information received in each case from the companies mentioned. Other items, while secured usually from reliable sources, have not the same authoritative origin.

ALBERTA

Calgary

Rapid progress is being made with the reconstruction of the new flour mill here. It will have a capacity of 6,000 barrels of flour per day.

Didsbury

The Cloverhill Creamery was recently destroyed by fire with a loss of \$30,000.

Medicine Hat

Brandram-Henderson, Limited, announce that they have purchased the plant of the Alberta Linseed Oil Mills at Medicine Hat. The capacity of this plant is now being increased 20 per cent., which will give the company a surplus over their own requirements.

The Lake of the Woods Milling Company is planning to build an extension to their mills at an approximate cost of 100,000.

The Brandram-Henderson Limited, Montreal, will build extension and make alterations to their plant here.

BRITISH COLUMBIA

Beaver Cove

The Beaver Cove Lumber & Pulp Company, Limited, are erecting a pulp mill and have completed survey for a water-power plant.

Burnaby

The Burnaby Oil Company contemplates the erection of an oil plant and other buildings.

New Westminster

Robert Abernethy, Manager of Eburne Sawmill Company, whose buildings were recently destroyed by fire, has announced that the company intends to rebuild at once.

Plans are being prepared for an addition to cannery for the Liverpool Cannery Company, Liverpool Street.

Rapid progress has been made on the erection of the new mill for the Timberland Company beside the Fraser River, and the main building is now well advanced. This plant will be equipped with the latest labor-saving machinery and will operate to the capacity of 100,000 feet per day.

Point Grey

The British Columbia Box Company, Limited, contemplate the erection of a sawmill on the banks of the Fraser River.

Port Hammond

The Port Hammond Cedar Mill Company are making extensive additions to their plant at Port Hammond, B.C., which when completed will double the capacity of their shingle plant and lumber mill output.

THE CANADIAN APPRAISAL COMPANY Limited

WE cannot urge too strongly upon Manufacturers whose Fire Insurance Policies contain the Co-insurance Clause, the vital importance of maintaining their insurance on the basis of present values. To this end our Appraisal Service is necessary in order that the insurable values may be accurately established. In the event of a fire loss the Appraisal will insure a quick and equitable adjustment.

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CANADA
LIMITED
HAMILTON MONTREAL

Port Coquitlam

Plans are in progress for a woodworking factory for A. W. Keith.

Prince Rupert

A syndicate of Canadian and American interests will construct ten steel ships of 8,800 tons each at a cost of approximately \$16,000,000.

VANCOUVER**Vancouver**

Montreal interests have placed a contract for the construction of twenty-four wooden steamships of 3,500 tons each with the Lyall Shipbuilding Company, of North Vancouver.

The Hygiene Products, Limited, of Winnipeg, may build a factory here.

The Hall Match Company, of Vancouver, have started the manufacture of matches. They have been experiencing some difficulty in securing a sufficient supply of chemicals, but this is being overcome, and the company expect soon to be in a position to take care of the match business for the Province of British Columbia.

MANITOBA**Brandon**

Excavation work has started on the new pump factory to be erected by Mayor Cater. The building will be a one-storey structure with an area of 56 by 65, with a basement of 56 by 25.

NEW BRUNSWICK**Fredericton**

The Hartt Boot & Shoe Company are planning an extension of their present plant.

St. John

An addition costing \$100,000 has been made to the shell factory of T. McAirt & Sons, Limited.

Van Buren

The Allendale Lumber Mill of Allan E. Hammond, was destroyed by fire, with an estimated loss of \$150,000. Mr. Hammond will rebuild at once.

NOVA SCOTIA**Halifax**

The Bedford Construction Company, Limited, Bank of Commerce Building, have the contract for three berths for the Halifax Shipyards Limited.

Tusket

The Argyle Shipbuilding Company are planning to build a plant at an approximate cost of \$100,000.

ONTARIO**Aurora**

The Baldwin Milling Company will erect two reinforced concrete storage buildings.

Barrie

Flour mills of the Barrie Milling Company were recently destroyed by fire, with a loss of about \$75,000.

Brampton

The contract for a \$12,000 factory extension for the Hercules Rubber Company has been let.

Brantford

Contract has been awarded for the erection of a \$16,000 boiler house by the Waterous Engine Works Company.

An addition is being made to the boiler house of the Cockshutt Plow Company.

Motor Trucks, Limited, have let contracts for a \$12,000 boiler house and a \$20,000 heat treating room. They will also build a 175,000 shell factory.

Burgessville

The Farmers' Club contemplates the erection of a \$10,000 cheese factory.

Fort William

Contract has been let for \$100,000 elevator and feed mill for the Ogilvie Flour Mills Company.

Galt

A three-storey addition is to be made to the plant of Newlands & Company, on Ainslie Street.

The Raelofson Machine Tool Company plans to build brick addition to machine shop at a cost of \$40,000.

Hamilton

Brown, Boggs Company, Limited, 37 Victoria Avenue N. will erect a pattern building.

The Hamilton Brass Manufacturing Company will at once erect and equip a modern factory on West Main Street on part of the Frid Brickyard property. The new building will represent an investment of \$50,000.

The following permits were recently issued: Ford-Smith Machine Company, factory on Cavell Avenue, \$30,000; Dominion Glass Company, addition to factory on Barton Street, \$2,000.

A building permit has been issued by Building Inspector Whitlock to the Hamilton Brass Company for the erection of a factory building on Main Street, at an estimated cost of \$25,000.

An addition will be made to the plant of the Otis-Fensom Elevator Company at a cost of \$40,000.

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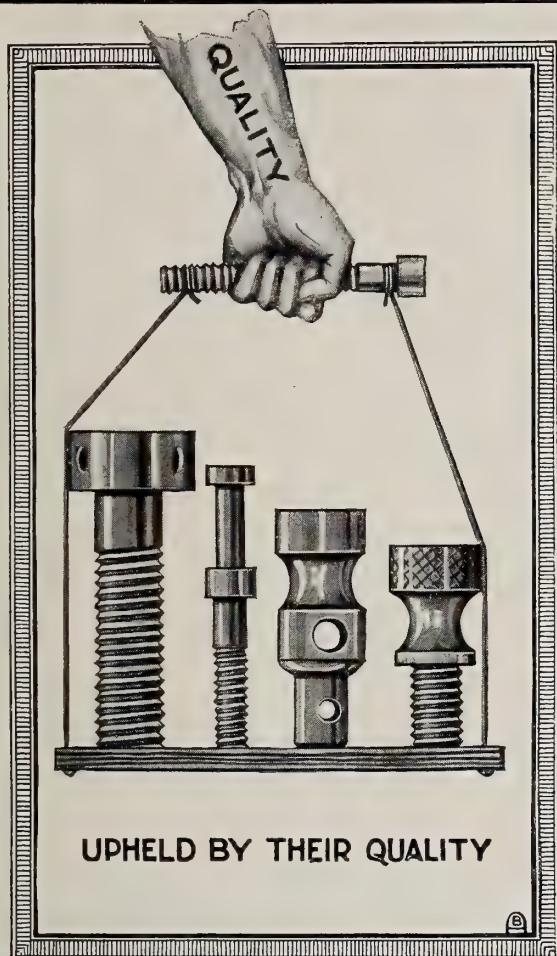


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Ingersoll

One complete new building, 80 x 50 feet, and an extension to the old plant, 50 x 32 feet, are being added to the plant of the Ingersoll Machine Company.

Kitchener

The Canadian Consolidated Rubber Company are erecting a \$10,000 addition to their administration building.

London

A \$20,000 addition is being made to the factory of the Peerless Hosiery Company, Limited, Adelaide Street.

Orangeville

Dods Knitting Company will erect an extension to their plant.

Ottawa

The factory owned by Sachs Bros. was burned, the loss sustained being estimated at \$10,000. Will likely be rebuilt.

Owen Sound

The Dominion Fish Company are contemplating reconstruction of the docks at the company's plant at the Sound end of Georgian Bay, and the erection of large freezer building and warehouse with local offices attached.

Pembroke

The plant of Thomas Pink Company, Limited, has been destroyed by fire, with a loss of about \$300,000.

Port Arthur

On July 20 the Port Arthur Shipbuilding Company, Limited, launched from their yards here the steamer "War Hathor." Miss Hazel Whalen, daughter of the president of the company, acted as sponsor. The steamer is being built on account of the Imperial Munitions Board for ocean freight

service, and is almost identical with the steamer "War Isis," recently built by this company.

Renfrew

A company, whose business will be the manufacture of emery or carborundum wheels, is negotiating with the Council of Renfrew with regard to the establishment of a plant in that town. The firm asks for fixed assessment and water rate, and it will erect a plant to cost some \$150,000, also building dwellings for its workmen. From 3,000 to 5,000 horsepower of electrical energy will be required. The City Council will submit a by-law to the ratepayers providing for fixed assessment and water rate, and permission for the Calabogie Power Company to furnish the necessary power.

The National Abrasives Company, lately of Hamilton, are busy with their new works at Renfrew. The Hamilton Bridge Company are taking down the steel structure at Hamilton for re-erection at Renfrew.

Stratford

The Whyte Packing Company are erecting a \$17,000 tank house.

Thorold

Contract has been let for the erection of an addition to the Beaver Board plant costing \$100,000. This involves the construction of a reinforced concrete building to be completed in two sections.

The Peerless Pulp Company's plant has recently been destroyed by fire with a loss of about \$100,000.

Tillsonburg

Contract has been let by the Huntley Manufacturing Company for the construction of a new plant on the site of the former one destroyed by fire. The new structure will cost at least \$30,000.

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18 TORONTO STREET, TORONTO

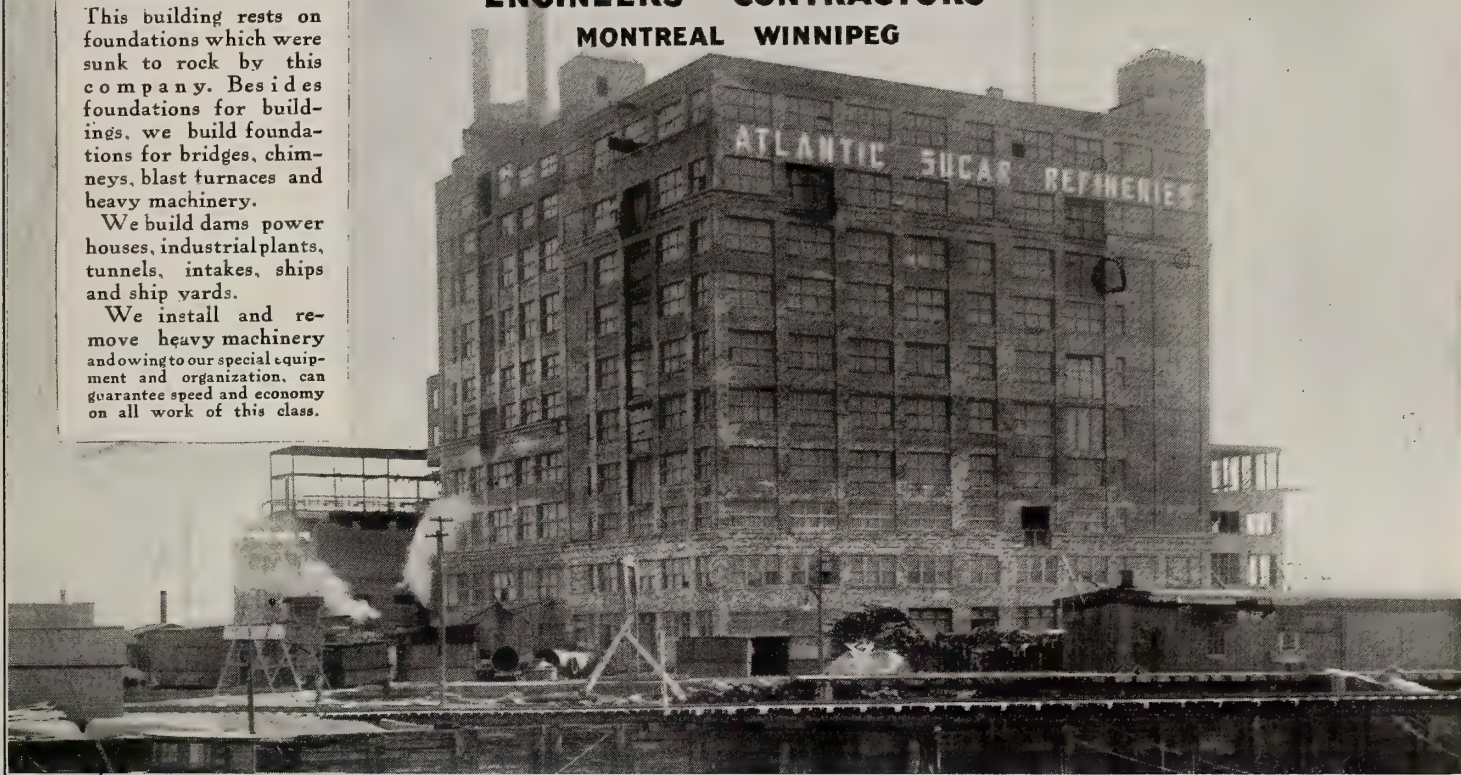
THE FOUNDATION COMPANY LIMITED

ENGINEERS CONTRACTORS
MONTREAL WINNIPEG

This building rests on foundations which were sunk to rock by this company. Besides foundations for buildings, we build foundations for bridges, chimneys, blast furnaces and heavy machinery.

We build dams power houses, industrial plants, tunnels, intakes, ships and ship yards.

We install and remove heavy machinery and owing to our special equipment and organization, can guarantee speed and economy on all work of this class.



John Morrow Screw & Nut Company, Limited

INGERSOLL - ONTARIO

Manufacturers of

HIGH-GRADE TWIST DRILLS, REAMERS
SET SCREWS, CAP SCREWS, AND NUTS
OF EVERY VARIETY AND FINISH

**Always Use Morrow Product—
Satisfaction Guaranteed**

Toronto

Repairs costing \$11,000 have been made to the factory of the Jefferson Glass Company, Carlaw Avenue.

A small addition is being made to the plant of the Chisholm Milling Company, West Market Street.

An addition is being made to the factory of the Waterbury Chemical Company, 58 Spadina Avenue.

The Corrugated Paper Box Company, 187 Geary Avenue, are making an addition to their plant.

T. O. Aked has let the contract for the construction of a new woollen manufacturing plant, operations to commence at once.

The Massey-Harris Company have secured land at King and Stafford Streets for site for a new storehouse to be built at once.

Tenders were called recently for the erection of a factory for the Ontario Soap & Oil Company.

Work has been started on the erection of the new factory buildings at Leaside for the Leaside Munitions Company, of which E. A. Wallberg, C.E., is the head. The foundations are being placed for a machine shop 600 x 129 feet. The forge shop will be 281 x 147 feet, and there will be a boiler shop, storehouse and other smaller buildings. The construction is brick, concrete and corrugated iron, with steel sash. MacGregor & Macintyre, Toronto, have the structural steel contract.

The city architect has issued the following permits: Canadian Aeroplanes Limited, brick addition, \$40,000; British Acetones, still building, \$15,000; Woods Manufacturing Company, two-storey brick factory building, \$69,000; Martin-Senour Company, addition to factory, \$3,000.

Plans have been drawn for a new plant for the Bawden Pump Company, also for an extension to the machine shop of the Bawden Machine Company, Limited.

Walkerville

Hiram Walker & Sons, distillers, have formed a company for the manufacture of aniline and other dyes, and propose shortly to commence the erection of a \$1,000,000 plant. They also plan to build a factory at Walkerville to manufacture toluol.

Windsor

The Driver, Harris Company, of New Jersey, have secured a site here and contemperate building a plant at a cost of about \$60,000.

The McGregor, Banwell Company are erecting a \$60,000 factory.

QUEBEC**Bagotville**

Ponliot Company, Limited, will erect a \$25,000 sawmill and rossing mill.

Chicoutimi

A flour mill will be erected here by P. Riverin.

Cote St. Paul

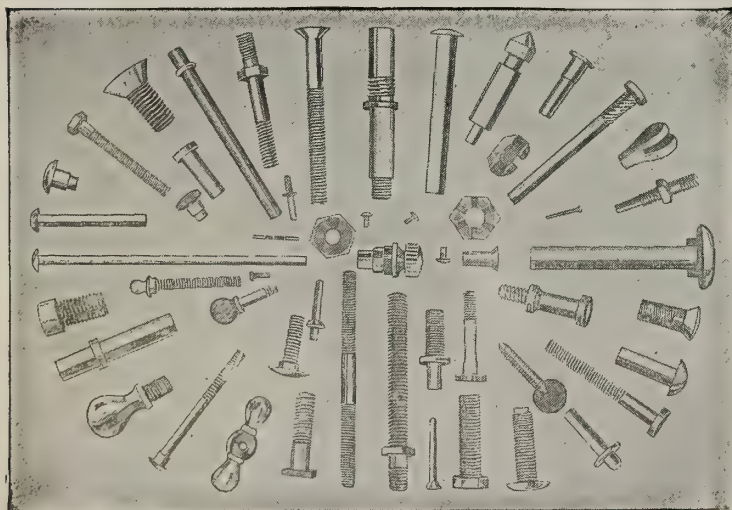
The erection of a large plant on the unit plan is contemplated by Crane, Limited, Montreal, at an initial expenditure of \$400,000.

Drummondville

The Drummondville Match Company will erect a \$100,000 match factory to replace the one destroyed by fire.

East Broughton

The Dominion Asbestos Spinning Company has started a plant at East Broughton, Que., for the manufacture of as-



Automatic Screw Machine Products

ACCURACY

QUALITY

Our Mechanical Engineers are at the service of our Clients.

UNITED BRASS & LEAD Limited

284 ST. HELENS AVE. - - TORONTO

W. L. TOBIAS, Superintendent
(Formerly Superintendent National Cash Register Co.)

You Pay for Good Wire

whether you use it or not. If you buy a cheap wire whose quality is kept down to meet a price instead of up to meet a standard, you may pay several times the cost of good wire in replacement of your wiring or the building in which it is installed.

“Sterling” Rubber Insulated Wire

is kept up to a high standard of dependability and is sold at a reasonable price that makes it available for the cheaper class of buildings. It has always exceeded the requirements of the N. E. C. by a liberal margin, which constitutes the purchaser's insurance against the defective wire risk.

Write our nearest office for samples and prices

**Standard Underground Cable Co.
of Canada, Limited**

General Offices and Works:
Hamilton, Ont.

Montreal, Que.
Hamilton, Ont.

Toronto, Ont
Seattle, Wash.



BROWN'S

Beaver Brand Metals

Copper, Brass, Bronze, Canada Silver, and Gilding Metal in sheets, rolls, plates and rods. Naval Bronze, Yellow Metal and Muntz Metal in sheets and rods for shipbuilding requirements. Specify Beaver Brass Rod for drilling and free cutting. Extruded shapes.



Seamless Brass and Copper Tubes.
Guaranteed Ingot Metals—Yellow, Red and Composition Ingots.
We are Purchasers of Copper Bearing Material.
Link up with Beaver Brand Products—you'll like the quality, price and service.

Brown's Copper & Brass Rolling Mills, Limited

New Toronto, Ont., Can.



bestos yarn, carded asbestos and sheet packings. Asbestos cloth, brake linings and packages will be manufactured later on when the necessary machinery can be secured. Importations of foreign asbestos having been cut off there is a large demand for Canadian asbestos and several properties that had been idle for years are now being worked in Quebec.

Levis

A syndicate of several shipbuilding companies of the Dominion may shortly erect a \$1,500,000 plant here.

Lumsden Mills

The Kipawa Fibre Company have commenced breaking ground for their new mill site south of Lake Temiskaming. It is proposed to erect a sulphite plant at a cost of about \$5,400,000.

Montreal

An extension is being made to the power house of the Imperial Tobacco Company, Limited, 900 St. Antoine Street.

Contract has been let for the erection of a \$45,000 shell factory for Lymburner, Limited.

The Hydraulic Machinery Company, Limited, will erect an extension to their machine shop.

A factory and office building are being erected for Williams & Wilson, Limited, 320 St. James Street.

A \$20,000 factory is being erected by the Canada Metal Company, Limited.

Quebec

With a capital of \$5,000,000, a new shipbuilding concern has been formed on the shores of the St. Lawrence River, opposite Quebec City. The building of the docks and yards has commenced.

St. Jerome

The Regent Spinners, Limited, Ste. Marie Street, will erect a \$40,000 brick factory.

A Mistaken Impression Has Been Given

Du Ponts of Wilmington Are Not Interested in Two Corporations Formed Since the War

In order to counteract the impression that they are identical with the du Ponts who have been mentioned prominently in connection with the Allied Industries' Corporation and the French-American Constructive Corporation, the E. J. du Pont de Nemours & Company of Wilmington, Delaware, have issued a statement in which they state that neither they, nor any of their subsidiaries, or affiliated companies, nor any of their officers or directors are in any way connected with or interested in the Allied Industries' Corporation, or the French-American Constructive Corporation, sometimes indefinitely referred to as "the Duponts of Wilmington."

Requisites in Business

In a recent issue the *American Magazine* draws up an interesting list of requisites for various commercial occupations. For instance, it states that the head of a department should possess the following: Keen sense of justice, sympathy, tactfulness, courtesy, teachableness and knowledge of human nature. The bookkeeper needs most: Accuracy, speed, perseverance, concentration and mathematical ability—figures. To be successful in going after new business the trade solicitor should have: Tact, courtesy, verbal expression, personality, optimism, self-confidence and knowledge of human nature. An auditor is in danger of proving a misfit and a failure unless he possesses in marked degree: Love of details, perseverance, patience, judgment, deliberation, calmness, accuracy and analytical ability.

Nova Scotia Steel & Coal Co. LIMITED

PLATES

1/8 to 5/8" thick up to 48" wide, weighing up to 1,200 lbs. each

Fluid Compressed Steel Forgings

We manufacture Merchant Bars, Rounds, Flats, Squares, Ovals, Half Ovals, Tires, Sleigh Shoes, Plain or Twisted Concrete Bars, Agricultural Sections, Cold Drawn Shafting, Machinery Steel, Angle Bar Fish Plates, Track Spikes and Bolts.

General Sales Office :
WINDSOR HOTEL, MONTREAL

Head Office :
NEW GLASGOW, N.S.



Peters Cartridge Co. Paper Shell Building

Architects:
Van Leyen & Schilling
Detroit, Mich.

We built this building in the fall of 1915. Since that time we have completed four other large contracts. We have lately been awarded contracts on two more large buildings, bringing the total value of buildings erected for the Peters Cartridge Co. to \$760,000.

We aim to do every job in such a manner as will assure us all the building work the owner may require done in the future.

WELLS AND GRAY LIMITED

ENGINEERS AND CONTRACTORS

Branch Office:

Bank of Commerce Building
Windsor, Ont.

701 Confederation Life Building
Toronto, Ont.

Trade Enquiries

These enquiries come into our hands from various sources. The Weekly Bulletin of the Department of Trade and Commerce, from which the enquiries indicated in the sub-heading allotted to them are taken, should be read regularly by those interested in foreign trade. It will be sent free on application to the Department at Ottawa. The names connected with all those enquiries can be furnished direct from the Commercial Intelligence Department, Canadian Manufacturers Association, Toronto.

DOMESTIC TRADE ENQUIRIES

172. **Salesman.**—A salesman claiming fourteen years of successful salesmanship in Quebec and the Maritime Provinces is open for an opportunity to develop manufacturers' business in those provinces.
173. **Agency.**—A manufacturers' agent in St. John, N.B., desires to represent Canadian manufacturers for an extensive territory surrounding St. John.
174. **Tower Bells.**—A local house dealing extensively in school supplies would like to hear from founders of tower bells.
175. **Lead Tubes.**—An enquiry is made for Collapsible Lead Tubes suitable for rubber, cement, etc.
176. **Agent or Salesman.**—One of the partners of a firm of Manufacturers' Agents, who has had selling experience in England, France, South America, and eight years in Canada, including Winnipeg and the West, is prepared to undertake selling or executive work for manufacturers desirous of extending their business operations.
177. **Agency.**—A gentleman offering bank and business references, who has lived in Quebec Province for many years, and speaks both French and English, would like

to get in touch with a manufacturer who is considering the extension of his business where he can make use of a good connection.

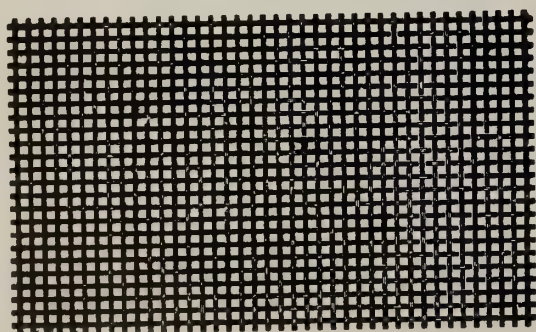
178. **Agency.**—A general agent in Quebec City advises that he is now open for transactions on a commission basis. His activities include purchasing, sales, jobbing, shipping, etc.

EXPORT TRADE ENQUIRIES

179. **Felt.**—We are supplied by a well-known Manufacturers' Agent in Melbourne with samples of felt used for the manufacture of slippers. He supplies us with details as to payment, and may be able to arrange to cable orders.
180. **Agency.**—A new firm has begun operations in Pittsburg, where they wish to sell all sorts of mill supplies to clientele established in another connection.
181. **Agency.**—A manufacturers' agent in Sydney, Australia, desires to get in touch with Canadian manufacturers of mill supplies, particularly engine packing and asbestos goods.
182. **Japan.**—A Montreal manufacturer on a recent trip to Japan found openings for the following articles: Cedar pencil slats, fertilizers, flour, rails, mining and saw-mill machinery, structural steel and chrome iron ore. We shall be glad to put enquirers in touch with our Montreal member.
183. **Australia.**—We are in communication with a large importing house in Australia who are sending a man to Canada to develop trade between Canada and Australia in all bottled goods, confectionery, condiments, perfumery and pharmaceutical chemicals. Kindly let us hear from you if you are interested in meeting this gentleman who will arrive in Canada this fall.

GREENING'S

Wire Cloth



Wire Screening

All grades of Wire Cloth, Double Crimped.

Screening Accuracy Guaranteed.
Made of Steel, Copper or Brass.
Galvanized and Tinned Cloth.

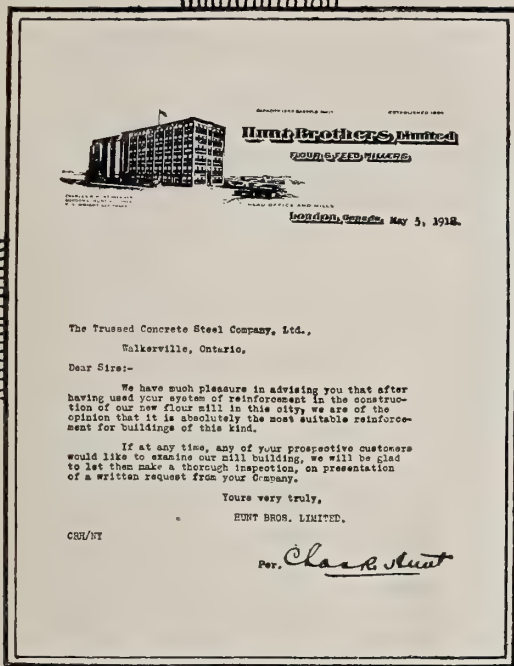
Perforated Metals

Wire Rope

MANUFACTURED BY

THE B. GREENING WIRE CO., Limited

HAMILTON, ONT. : : MONTREAL, QUE.



HUNT BROS. FLOUR MILL, LONDON, ONT.

Watt & Blackwell, Architects

Archibald & Holmes, Contractors

Complete Satisfaction

Owner Architect Contractor

The accompanying letters tell their own story.

Truscon offers every assistance possible to architects, owners and contractors.

For the benefit of our customers we maintain Engineering Departments skilled in reinforced concrete construction. Any advice asked for on any problem of reinforced concrete construction is cheerfully and readily given without cost.

Truscon Service includes prompt shipments and attention to essential details regarding deliveries, co-operating with contractors in expediting construction.

Truscon Service includes a standard of excellence in materials that makes for permanence.

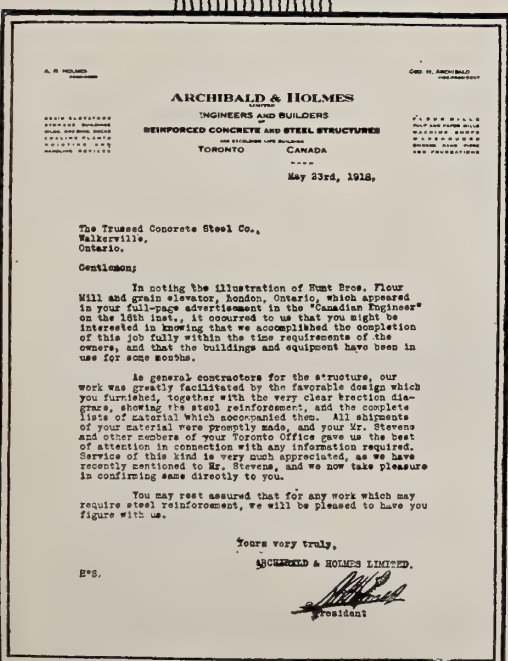
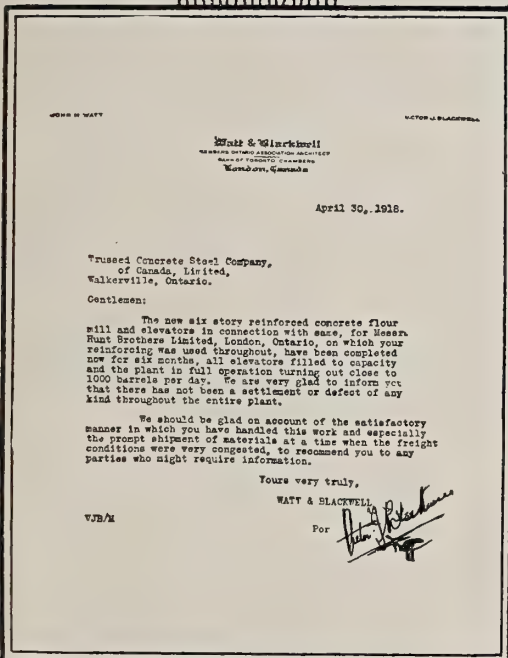
Truscon Reinforced Concrete construction offers a degree of rigidity, strength, sanitation, durability, economy, and a volume of light which recommend it for factory purposes, especially where heavy machinery is to be used.

Truscon Service Anticipates — Assists — Endures

Trussed Concrete Steel Co.
of Canada, Limited

WALKERVILLE, ONT.

Montreal Toronto Winnipeg Calgary Vancouver



184. **South America.**—A British firm, with offices in New York and import and export connections in South America, desires to extend their operations in household hardware, seamless hosiery and other lines finding sale in Central and South America. We shall be glad to put members in touch with the New York office.
185. **South Africa.**—A well organized commission house, with branches in various large centres, is interested in forming export connections for timber, rubber, flour, dry goods, hardware, metals and general merchandise.
186. **Scandinavia.**—We are in communication with a firm in Copenhagen who offer American and English references and wish to act as agents for Canadian firms desiring export representation in Norway, Sweden and Denmark.
187. **Mexico.**—Tin caps (known also as crown corks) for bottles: a large concern would like to have quotations of this article from the Canadian manufacturers.
188. **Mexico—Dry Sulphite.**—A concern which owns a paper factory wants quotations on this product.
189. **South Africa.**—A mercantile and mining broker in Johannesburg, selling on a commission basis and offering London and African references, is desirous of hearing from firms wishing representation there.
190. **Russia.**—We have a communication from a Russian, who is a graduate of Petrograd Polytechnic Institute, who has had charge of statistical research of Russian export and import for the Russian Government. He is desirous of promoting trade between Russia and Canada, particularly to the Siberian Pacific Coast.
191. **Great Britain.**—A firm in London, who claim a thorough knowledge of engineering and operate on a commission basis, would like to act as sole representatives for one or two important Canadian firms, with a view to extending trade after the war.
192. **West Indies.**—A firm of manufacturers' representatives, head office in England and branches in various parts of the West Indies and South America, are interested in representing Canadian manufacturers of foodstuffs, canned goods, hardware, furniture, etc.
193. **Spain.**—A firm in Barcelona would like to represent Canadian manufacturers of pulp, canned fish, etc.
194. **Exhibit and Agency.**—We have a communication from the Marseilles Committee for the Study of Economics, in which they inform us that they are establishing an exhibit in Marseilles at which manufacturers' products can be shown, and the officers are ready to enter into engagements which will enable manufacturers to be favorably represented in that city.

FOR SALE

Galv. 2 Black Iron Sheets.—Quantity of prime stock Galvanized and Black Sheet Iron, pieces 26g. to 18g., suitable for small stampings. Write us. The Steel Trough & Machine Co., Ltd., Tweed, Ont.

Quality



Service

FOR COOL BEARINGS

We Manufacture:

**Phosphor Bronze Tail Shaft Liners, Pump Liners,
Stuffing Boxes, Stern Tube Bushings, and
Brass Castings of every description.**

INQUIRIES SOLICITED

Tallman Brass & Metal Co.
HAMILTON, ONT.

Industrial Housing



QUICK SHIPMENT

A Train Load of ALADDIN Houses Per Day

Depending upon size of house, we load from one to three complete houses in each car. Normally, shipments arrive at Atlantic Coast points in about six days after leaving our mill.

QUICK RESULTS

A Gang of 120 Men Can Erect 10 ALADDIN 5-Room Houses Per Day

Aladdin Houses are Readi-Cut. Every piece of material, joists, studs, rafters, sheathing, siding, flooring, interior finish, is cut to proper size, marked and numbered and ready to nail in place.

SERVICE PLUS

Immediate Action on Any City Project—or Any Housing Problem

Our plans are drawn, prepared and finished for cities of from 300 to 3,000 population. Experienced town planners, landscape architects, engineers and builders have spent months of study and work in their production. This service becomes a part of every Aladdin Housing transaction—a single house or a complete city.

Fall is at Hand

Do your building NOW and well-housed men will earn you dividends this winter and the years to come.

Hundreds of American Corporations Have Built Aladdin Houses

As many as five hundred Aladdin houses have been sold to a single corporation. Re-orders are constantly received from corporations who have tested our houses by actual purchase and erection.

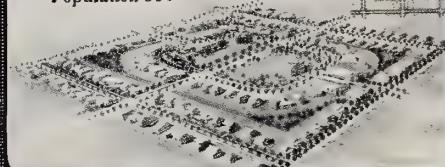
A Single House—or A Complete City

The Aladdin Company will quote you a definite price on a single house or complete cities of 300, 500, 600, 1,000, 1,500 and 3,000 population. These cities are now listed in our book on Industrial Houses. Cities include homes, stores, churches, schools, municipal buildings, water distributing systems, electric light plants and distribution, sewerage systems, trees, etc.

"Book of Aladdin Homes" No. 331 with full information, floor plans and prices will be mailed on request. Aladdin book "Industrial Housing" mailed only to inquiries written on business or official stationery.

Complete Cities

Production City
An Aladdin Miners City
Population 600



-or a Single House



CANADIAN ALADDIN CO. Ltd.

C.P.R. BLDG., TORONTO, ONT.

If building in the States address The Aladdin Co., Bay City, Mich.

BATHURST LUMBER CO.

LIMITED



Kraft Pulp, 65 tons per day

Unbleached Sulphite Pulp, 50 tons per day

Spruce Lumber, Band Sawn

White Pine Lumber, Band Sawn

Complete Planing and Resaw Mill

Timber Limits, 1,500 Square Miles



BATHURST, N.B.

. .

CANADA

Good Things from Other Magazines

Tariff as a Prosperity Maintainer

**South Africa Sees the Wisdom of Keeping
Up a Protective Tariff to Preserve its In-
dustries in the Trying Days After the War**

(From South African "Commerce and Manufacturers Record")

In every corner of the civilized world, business men are cudgelling their brains trying to figure out the trade situation that will confront them when the war is over, in order that, as far as is practicable, they may be preparing themselves to meet it.

They know that in a general way the probabilities point to an era of intense production and high prices. Large areas that were once thickly populated have been completely devastated, and the reconstruction of those areas alone will call for enormous quantities of building material, engineering supplies, farm implements, household furnishings, and general merchandise. The military and naval requirements of the opposing forces have been on such a stupendous scale that the whole world is being drained of its immediately available supply of materials. These materials, moreover, to be effectively used, must be in a large measure destroyed, or at any rate employed in a manner that will prevent the subsequent conversion to peaceful uses. Meanwhile the growing shortage is being accentuated by the steady transfer of men from ordinary forms of production to military service

or to the manufacture of war supplies. At a low estimate, the world is compelled to support itself to-day with a working staff of 40,000,000 less than usual, with the probability that it will be permanently deprived of the services of at least half that number by the wastage of war.

Elemental and obvious facts such as these naturally encourage the hope that for some time to come profitable markets will be found for almost everything the world can produce. Should that prove to be the case, South Africa will undoubtedly share in the general prosperity, so long as no untoward conditions arise to prevent us doing so. Our agricultural products will clearly be in demand, providing ocean tonnage can be secured to move them, and providing they are not legislated out of European markets by excessive import duties. Subject to the same qualifications, our manufactured products should also be in demand in our home market, providing we can continue to secure necessary raw materials.

Industry's Difficulties

But the war has taught us that we cannot count for very long upon the continuance of any set of conditions—military, legislative or economic. It is always the unexpected that is happening, and it is this element of uncertainty, more than anything else, that is causing business men to pursue a policy of extreme caution with regard to plans for after-the-war factory expansion.

STEEL CASTINGS

**Manganese, Chrome, and Nickel Steel Castings
from $\frac{1}{4}$ of a pound to 30,000 pounds**

**Steel and Semi-Steel Machine Moulded Gears
any size up to 18 feet in diameter without
the use of patterns**

Hull Iron & Steel Foundries, Ltd.

Head Office and Works

-

-

HULL, P.Q.

Whatever makes for stability is an aid to business building. Whatever tends to unsettle is an obstacle to progress in that direction.

Many Difficulties to Meet

From the commencement of the war to the present time, South African manufacturers as a class have had many and serious difficulties to contend with. Our materials have advanced to unheard-of values and quotations are offered only for immediate acceptance. In some cases they are no longer obtainable at any price, because their export to South Africa has been embargoed. Skilled workmen, whom it has taken manufacturers years to train, have been suddenly lost to them. Deliveries have been retarded, sometimes prevented, by interruptions of various kinds, and taxation has been increased in various ways till it has become almost a burden.

With such odds against them, our manufacturers would instinctively have pursued a policy of retrenchment and awaited a return to normal conditions, had not powerful incentives to effort been offered them, first, in the opportunity to be of real service to the Allied cause by supplying local requirements; and, second, in the large orders at high prices which that urgency made available for them. Under these stimuli they applied themselves with zeal to a task that otherwise might easily have defeated them, with the result that they have expanded their plants and multiplied their output, usually with profit to themselves but always with benefit to labor and the country generally.

With the declaration of peace, however, manufacturers will enter upon a period when the call of duty will not sound so loudly, and when military urgency will give place to competitive bargaining as a basis in fixing current prices.

That period, unfortunately, will probably witness a continuance of the discouragements that have recently acted as a brake upon progress. Materials, owing to a world-wide scarcity, will remain high-priced; the shortage of ocean tonnage cannot be quickly overtaken; and, while the labor situation may ease up considerably, there is sure to be increased taxation.

These indications point the way to reflection, as conditions will be created demanding very careful handling on the part of the Government. Industry will need all the protection, all the fostering care we can give it. In such a crisis the introduction and maintenance of a sound fiscal policy will be indispensable if our manufacturers are to be allowed to retain the home market. To suddenly strip our industries of the protection and encouragement experienced under war conditions and to permit the country to be flooded with oversea, and possibly enemy-manufactured goods, would be a crime against the Union. Manufacturers must not be subjected to the withering fire of foreign competition in their home market. Of course we shall be feasted and surfeited with the time-worn Free Trade dogma of our old-school theorists, and the Government will be told that the country will be better off without industries that need protecting, but unfortunately the financial needs of the country will be such as to prevent any serious tinkering with the tariff.

Tariff Established Industries

It must not be forgotten that the present moderate element of protection afforded by the existing tariff was responsible for establishing industries in the country in pre-war days, which have proved of real value to the people during the war period. These industries were founded under the protective clauses of the tariff, and those that have been

The Hamilton Bridge Works Co. Limited

HAMILTON, - ONTARIO

ENGINEERS, MANUFACTURERS and CONTRACTORS

**Steel Railway
Bridges**

**Steel Highway
Bridges**

Steel Buildings

Steel for Ships

Steel Turntables

**Steel Trusses
and Columns**



**Capacity
36,000 tons**

**5,000 tons of Standard
Shapes of Structural
Material in our yards
for immediate ship-
ment.**

Enquiries solicited

The above is a building recently erected for the Steel Company of Canada at Hamilton, Ontario

CANADA FOUNDRIES & FORGINGS LIMITED

Original Producers and Distributors

Nail, Tinners',
Farriers', Riveting,
Machinists'
Hammers



and Sledges, also
Axes and Wedges
of All
Descriptions

Blacksmith Sledge No. 37. Cross Pein Solid Cast Steel

roduced at
The James Smart Plant, Brockville

ECONOMY

Rapid production is dependent on the use of
ECONOMICAL TOOLS AND STEEL. It is
safer *not* to specify High Speed Steel, but

Demand "Tyr," the Economy Steel
MADE IN CANADA

ARMSTRONG, WHITWORTH OF CANADA
LIMITED

Offices, 22 Victoria Square, Montreal

Dominion Bank Building, Toronto
WORKS, LONGUEUIL, P.Q.

THE CANADIAN BRIDGE CO., Limited WALKERVILLE, ONTARIO

Montreal Office: New Birks Building

MANUFACTURERS

RAILWAY AND HIGHWAY BRIDGES

Locomotive Turn Tables. Roofs, Steel Buildings and
Structural Iron Work of all Descriptions

started since the war have enjoyed what is practically prohibition. We have learnt to develop our own resources in time of need, and we must maintain the position won for industrialism.

The war is teaching every country to cultivate self-reliance and to become as far as possible self-contained. Tariff protection is the surest means of attaining that object; Free Trade is the surest means of defeating it, because the latter policy makes a country dependent upon the entire world.

Must Meet War Debt

The war has cost South Africa some thirty million sterling, which has added to our national debt a figure which will prove a heavy burden to the limited white population of this country. This debt must, in time be liquidated, and it can only be liquidated by our submitting to taxation of one kind or another. Assuming for a moment that the Government dispensed with the tariff as a means of revenue, what new form of taxation could be devised that would give the same yield with so little friction? No! The tariff has come to stay, and it is the duty of industrialists to see that it is framed on lines which are calculated to enable internal development to proceed upon a basis of equity and common-sense.

South Africa will, in the near future, have to face the problem of finding employment for her returned soldiers. A protective policy, based upon a scientific tariff, will be the means of opening many doors, through which employment at remunerative wages may be found.

The Re-education of the Returned Men

The Important Link in the Chain of Re-establishing the Returned Soldier in Civil Life is that of Guiding Him into the Right Path

(From the "Vocational Summary")

The problem of re-educating the returned soldier of Canada is one of many phases. That it is an individual problem is conceived by all who have had a part in the work. Each man must be dealt with upon the merits of his case without regard to precedent. The factors in each differ so widely that no general rules can be made to fit all.

The ultimate good of the man and of his family is the chief consideration of the whole plan. Therefore, the important link in the chain of re-establishing the returned soldier in civil life is that of guiding him into the right path—that path by which he may most quickly and most surely be merged into the life of the community. This is one of the most difficult things that the Vocational Branch of the Invalided Soldiers Commission has to do.

Personal Interviews

The Canadian plan has helped to solve this part of the problem by arranging for a series of personal interviews between the vocational officers and the returned men. These interviews afford opportunities for establishing friendly relationships between the soldier and himself, with a chance of showing deep sympathy and a real desire to help, which, coupled with sound judgment, gives untold influence to the vocational officer.

This personal contact with the man, still suffering from the dreadful shock of war, accomplishes more when rightly

"Put it on Wheels"



Style No. 530

Toronto's Exhibition each year has something of interest to all.

For the manufacturer the display of Trucks for Factory and Warehouse use that we are showing is one seldom seen outside the pages of a catalog.

Here may be seen a large variety of sizes and styles of Trucks designed for various purposes; also there is the opportunity of studying the construction and utility of same, and the possibility of securing some points on the subject of Trucking that may prove beneficial.

The exhibit is located in the east end section under the Grand Stand (Industrial No. 2).

THE W. S. MAHAFFY CO.

Manufacturers of Factory and Warehouse Trucks

COR. GLADSTONE AND TRAFALGAR AVENUES

TORONTO, ONTARIO

A SPECIALIST FOR EVERY PROBLEM

During our 27 years' experience we have solved thousands of manufacturing problems—originating, improving, adapting and standardizing processes and equipment to meet all kinds of manufacturing requirements.

To-day our services are, more than ever, the assurance of solution of those manufacturing problems which are confronting every manufacturer.

War conditions have given to you problems in materials, in processes, in operation. Why not let our industrial chemists assist you to a solution?

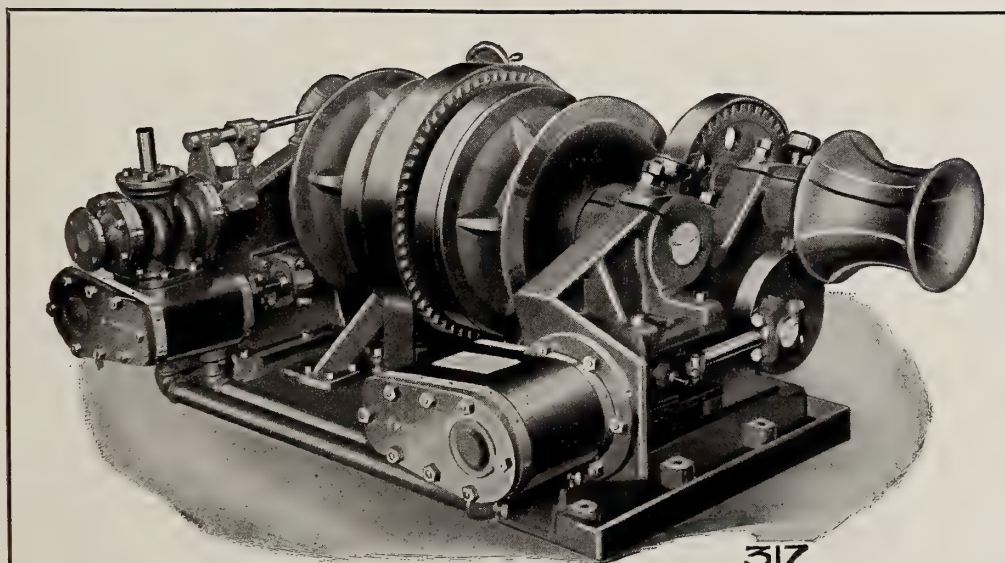
**The Largest and Best Equipped Commercial Laboratories
in Canada.**

Milton Hersey Company, Limited

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used than any other one thing in restoring the man to his former attitude towards life.

The testimony of the boys themselves goes to show that this work, though difficult, is very essential and is being wisely carried on in Canada.

A talk with one of the returned and re-educated men proved the truth of this statement.

He was very reticent regarding his experience in France. The bronze button, "For faithful service at the front," he carelessly said was given to all returned soldiers. The distinguished honor badge he wore was no more than many others had received. He declared that they were so plentiful "they were brought up with the jam." He said his wound was "not too bad," not nearly so serious as that of many of his comrades. In fact, his whole attitude was so modest in regard to his service that it was with some surprise we learned from others of his bravery at the front.

He frankly told us that he wished to forget the dreadful days in the trenches, the evidences of which he would always bear in his body; but on reference to his return to Canada his face brightened and his tongue was loosed. "And the sugar they gave us at Halifax!" he exclaimed, "the first I had had for my coffee for two years. My, but it was good."

Resented the Delay

"Yes," he continued, "when I got my blighty I stayed in England in a hospital until I could be brought over here. The one thing we wanted was to get home and to see the folks, so we rather resented the delay of a few days at Halifax, where we were held to see the doctor and some other fellow—I believe they called him a vocational officer.

This last chap asked a lot of questions, and wrote down my life history, it seemed to me, on a pink sheet of paper."

"Our arrival at E— was a great event. We fellows felt we must be pretty well worth while when we saw the crowd with motors to meet us. One man in the crowd gave me a hearty greeting. He appeared to know all about me, spoke of the wound in my side, and referred in such a knowing way to other things in my life that I began to wonder if he was a friend I had forgotten. And it was long after that I learned I had that pink sheet of paper, which I had so resented, to thank for the cordial reception I had received. It had reached the district vocational officer the day before I arrived.

Invalids Making Things

"The journey across the continent had been long, and the clean hospital beds looked good to me. The doctor said I wasn't quite strong enough to go home, as the other boys were doing, for a short furlough, but my folks lived in town, so I could see them, and it wasn't so bad. For several days I was content to lie still and watch the other fellows in the ward. The boys were doing all sorts of things, weaving baskets, embroidering, making cloth on a loom—queer work for soldiers, it seemed to me. A young fellow next to my bed said the cloth he was weaving was for a sweater for his little sister. He hadn't seen her for a long time, and hoped to go home soon. Another man across the way found his work helped him to forget the pains and aches. I couldn't see what fun the men got out of this at first, but later on I found out how interesting some of these things were, after my prejudice had been overcome by a talk which I had with a sensible young woman who came

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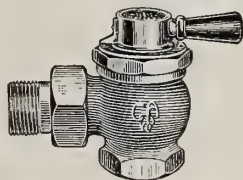
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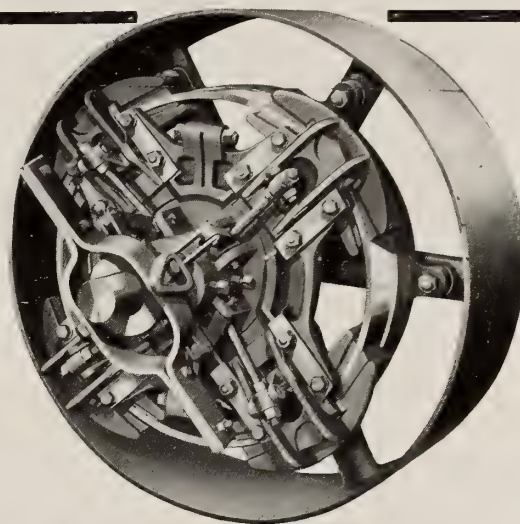


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around one day with some raffia in her hand and asked me if I wanted to make a basket. I refused at first, but it's hard to hold out against a woman who really has a fellow's best interest at heart, so to please her I began a basket. As I worked I realized that she was right in telling me that this simple work with my hands would help me think about other things than my troubles, and pretty-soon I noticed that my fingers were limbering up considerably. That basket finished, I wanted to do something more difficult, and I did.

A Scheme to Help.

"While I was still in the hospital some fellow came in to see me and told me of a scheme the Government had to help the boys who had left an arm or a leg in France, or who were in any other way disabled, so that we could not do the work we were doing before we went overseas.

"I didn't pay much attention to what he said, for I thought the country owed me a living and I was satisfied with that. I am ashamed now that I harbored that thought for even a little bit, but a fellow who is just recovering from the awful strain of the life over there and not quite over his wounds can't be blamed too much. The returned man understands—I found that out, for in a few days I had a message to go to the office of the vocational officer. When I discovered that this was the man who had given me such a cordial greeting on the day that I arrived I went very willingly. We had a real friendly chat, and he said he wanted to know what I had planned to do when I left the hospital and had to look out for myself once more. I told him that I did not know. I explained to him that the doctor said I could not go back to my former occupation, as the shell had taken off part of my shoulder and I could not do

the heavy work required in my last job. I had made up my mind to get something easy, but after that talk I no longer wanted to be a shirker. That man gave me a new idea of life. He made me see that thousands of my comrades in France depending upon me and others like me to get food and other necessities of life for them. He made me hear the call to get busy here at home, so that the boys at the front could do better fighting. He made me wish to be a man that counted for something in the industrial life of the country, which was doing so much for me.

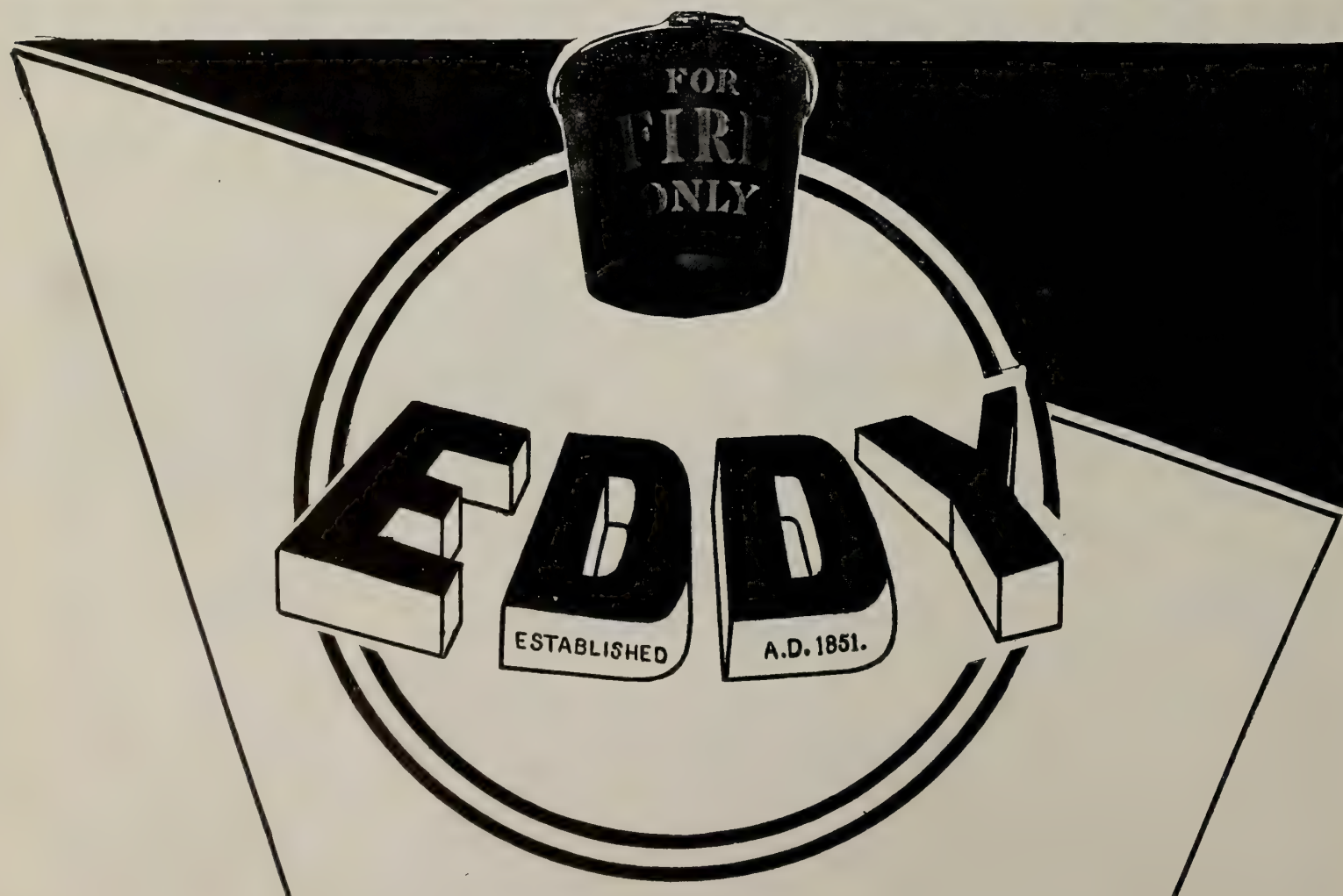
"Yes, sir; before that talk was over I knew what Canada was doing for her disabled men, and I knew what one of her disabled men wanted to do for her.

"It is a queer thing how quickly that officer and myself got on such friendly terms. I told him how I smoked. I even confessed to taking a drink occasionally when I could get it. I told him about the photography I practiced on the side, and we talked about the games of cricket in the old home town. I gave myself completely away to that man, but somehow I didn't seem to mind, for I felt I was talking to someone who cared, and that means a lot to a fellow whose nerves are still a little shaky, and he wonders in spite of himself if he is really going to be able to carry on.

Finding What to Do.

"Soon I was eagerly asking the vocational man what I could do and how I could fit myself to take my place in the world again. He told me I was yet to fight my hardest battle and that the result would not be known until all was over.

"He explained to me that while I was waiting around for my wound to heal I could join some classes in the convales-





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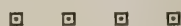


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cent school. He said I wouldn't have to stay any longer in the class than I wished, for the main thing was to get strong; but let me tell you when I got busy in that wood-work shop really doing things it was hard to stop."

It was with pardonable pride that he told of the articles he had designed and made, which now helped to make his home attractive.

"I had a talk later on with the vocational officer who told me," he continued, "that the Invalided Soldiers' Commission had classes in the technical institute in town, where they were teaching the returned men all sorts of things, from running a farm tractor to shoe repairing, and that I could choose the course I wished to take.

Survey of Man's Life

"He made what he called a survey of my industrial and educational life. There wasn't much to this. I had a common-school education and had been a carpenter before I volunteered. In talking over my plans for the future I thought this officer rather hard headed at first. Motor mechanics seemed a good thing to me, but he didn't seem to take to that. I was determined to do as I pleased at the beginning of that interview, but all of a sudden it seemed pretty clear to me that a job of that kind would not suit my bad shoulder very well, and then there would be a lot of fellows for the same work after the war. It seemed foolish, too, to throw away all the good training I had gotten as a carpenter. So I chose another course, one that would prepare me for a contractor—and the opening here is fine in that line.

"All during our talk I had been a trifle fearful that if I made myself fit to hold down a good job my pension might be reduced, but the officer assured me that pensions were given on the basis of physical disability, regardless of how much a man increased his earning capacity by re-training.

"Another worry came to me when I thought how I could take care of my wife and little boys while I was going to school. Difficulties faded away in the presence of that man, and he told me that the Government would give me an allowance each month during my training, and would also send a monthly check to my wife for herself and the kiddies. That bother settled, I determined to make good.

"The 10 days I waited to hear from Ottawa, after the Disabled Soldiers' Training Board had passed me, were kind of nervous ones, but when the word came back that the course was mine for the taking I lost no time getting started.

"The first day at school was pretty hard. One poor fellow got lost in the halls, so unaccustomed was he to the routine of school life. To begin all over again, when a fellow hasn't studied for 10 years or more isn't easy, but the teacher helped me lots. I've often wondered where so many men were found to do this work who had such big hearts and were so unselfish in all that they were doing for the soldiers.

The Man Considered First

"The best thing about this whole scheme is that it is always the man that is considered first. The work is planned for his good above all else. When the soldier is tired, the teacher advises rest, and no man is overtaxed. The hours are short at first, and gradually increase until a man can take a full day without feeling it.

"Most of us lived at home and took our lunch to school, which always tasted a little better with the cup of hot tea the school gave us.

"The teachers wanted us to have good times, and all sorts of entertainments were planned. Picture shows, concerts, field sports, and dances were given in turn, and the returned

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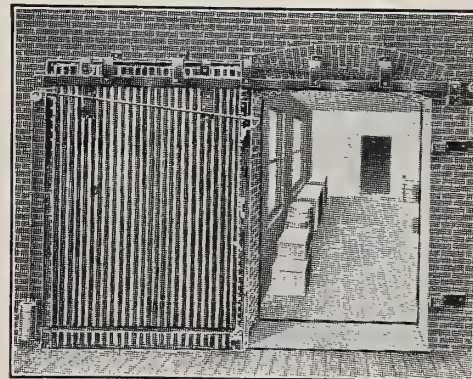
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men would bring their friends. It was lots of fun, and the boys enjoyed the girls even more than the ice cream.

"But don't think that either the teacher or the vocational officer are to be trifled with. They are kind but they are just. They know red-ink hemorrhages and other tricks of the malingerer at the front, and they easily recognize a slacker. The work must be done satisfactorily by both pupils and teacher, for monthly records are kept and sent to Ottawa, and if a man is not making good in one course he is given a try at another.

"Teachers must come up to standard, too. Perhaps it may surprise you to know that some returned men have lost their positions as teachers in several instances because they were not giving the soldier boys a square deal.

"To be a returned soldier is not to walk through life easily, and it is as well for those who are just returning to understand that a fellow isn't always going to be a hero to the world even if he has been 'over the top.' The goods must be produced, or the man, even though he bears the marks of service, must get off the job if he is not competent. There will be plenty of men fitted to do the work when the war is over and the employers are not to be expected to employ a returned soldier for charity's sake.

"One day I decided to stay at home from school. I wasn't sick; just lazy. To my surprise when pay day came my check was less than it ever had been, and the worst of it was the wife's and kiddies' was cut down also. I didn't miss any more days. I had to go whether I wanted to or not—and I mostly wanted to.

"When my course was finished I was given a month's pay as a bonus, because my work had been satisfactory.

"You can judge for yourself if I have made good. I'm earning more than I ever earned before the war, my home is more comfortable, and life is much better.

"I hope soon to have some positions under me that I can fill with other returned men. I keep in touch with the work, as the 'follow-up' man drops in on me occasionally.

"Do I think the re-education for the returned man does any good? Well, I guess I do. If it did nothing else but show a fellow that there are some men in the world like the district vocational officer and the teacher, I would cast my vote for it. Nothing means more to a man who is down and out than to feel that somebody understands. It puts heart into a fellow to be taught to help himself when he has lived for days with the dread that he might always be a burden to his family, and the knowledge that his country still counts on him to do his share makes him buck up as nothing else can. The men who are teaching these boys to live cheerfully in spite of their broken bodies are great.

"Yes, sir, it's worth all that re-education has cost, just to show the returned man how to face life again."

The Prevention of Industrial Accidents

Advantage of Shutting Out Sounds and Concentrating the Sight on the Machines Being Operated

(From the "Manufacturers News")

The British Health of Munition Workers' Committee on causation of industrial accidents has recently issued a report, drawn up by Dr. H. M. Vernon, who has in the course of his inquiries analyzed about 50,000 accidents.

Dr Vernon in his conclusions says, no attempt has been made to investigate certain factors, such as defects of machinery and absence of guards, but with that exception most of the other factors have been dealt with. Accidents depend, in the main, on carelessness and lack of attention of the work-

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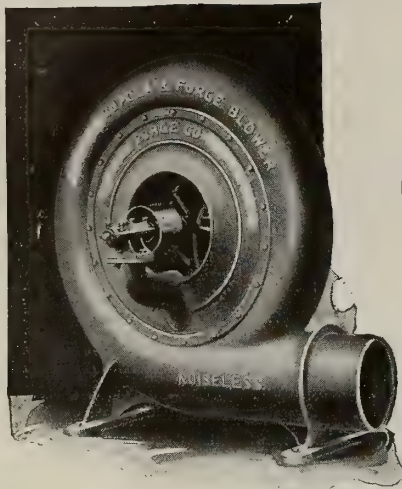
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ers, and so the more one can eliminate this lack of attention and increase the concentration of the worker upon his work the more will accidents be reduced. One wants to induce in all the workers throughout their hours of labor the same mental outlook as is present in the night-shift workers in the early hours of the morning. These workers have for the most part forgotten the pleasures and excitements indulged in shortly before coming on night shift, and they have nothing but an exhilarating breakfast and bed to look forward to. Such a mental state is impossible of achievement by the day-shift workers, but something in the way of mental calm and equilibrium can be attained by stopping all conversations except that relating to the work in hand. If the workers would consent to it, it would be a good plan to induce temporary deafness by plugging the ears, and so shut out the noise of the machinery, which is in itself an important cause of distraction and fatigue. Again, if it were practicable, it would be of value to shut out the sight of surrounding objects by separating the lathes or other machines from one another by partitions.

Fewer Accidents on Night Shifts

At a fuse factory, when the operatives are working a 12-hour day, the women's accidents were two and a half times more numerous than the subsequent 10-hour day period; but the men's accidents showed no difference. At all the factories inquired into, the night-shift workers suffered fewer accidents than the day-shift workers—the average defect being 16 per cent. This was not due to the output being smaller, as at the fuse factory it was distinctly bigger by night than by day. It was physical in origin, and was due to the night-shift workers settling down to a calmer mental state than the day-shift workers, and so becoming less careless and inattentive.

The temperature at the fuse factory was recorded continuously for six months. Accidents were at a minimum at 65° to 69° deg. F., and increased rapidly at higher temperatures (e.g., by 30 per cent. at temperatures above 75°) and slowly at lower temperatures. Continuous records were obtained of the external temperature of the town in which the shell factories were situated, and it was found that in all of them the accidents increased considerably as the weather grew colder, and diminished as it grew warmer. In one factory the women's accidents were nearly two and a half times more numerous when the temperature was at below freezing point than when it was above 47°, while the men's accidents were twice as numerous.

Ohio Makes Splendid Showing

Organized safety work in Ohio is winning a decided victory against dangerous accidents and death in the industries of the state, according to Victor T. Noonan, Director of Safety for the Industrial Commission of Ohio, who for the last six months has been conducting a survey as to what results have been obtained in accident reduction.

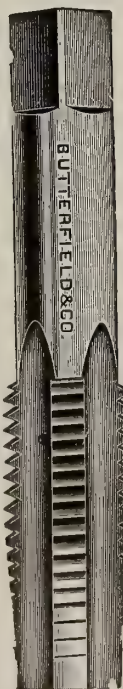
Mr. Noonan has been carrying on this survey in 500 of the larger plants throughout the state, where for the last several years a systematic campaign against accidents has been carried on. The result of the survey shows that where plants maintain accident prevention business departments, assisted by workmen's safety committees, which make frequent inspections, best results in reducing accidents are obtained.

"No state in the country," said Mr. Noonan, "has more industrial concerns that have adopted scientific business-like organizations to reduce accidents than Ohio. The result of all this organized safety work throughout the larger concerns of the state, is that at least 50,000 workers have been saved from injury and death in Ohio during the past few years. Were it not for this united effort by the companies against

BUTTERFIELD TAPS

Long Service

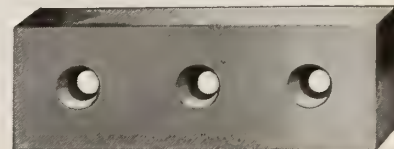
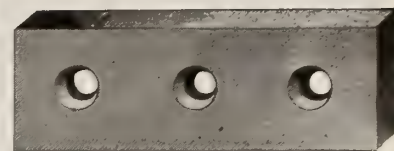
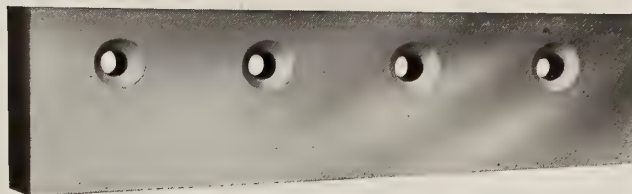
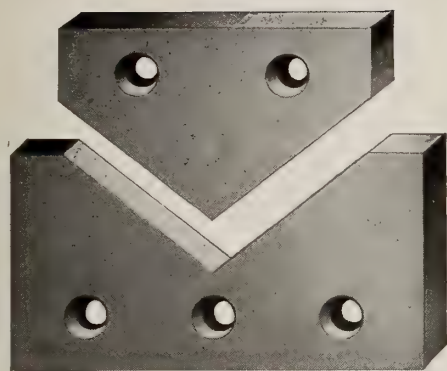
The Quality of Steel in Butterfield Taps assures the longest possible Service. They cut quickly and cleanly and have been proved of exceptional value on shell work.



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M. B. ROBINSON	Asst. Secretary

accidents, the total number of accidents in Ohio reported to the State Industrial Commission would have been very much greater.

"The splendid experience of companies who have reduced their accidents by safety committees and business-like organizations is the best proof that those companies and employers who have not adopted safety organizations in their plants, should do so at once," the director said. "To such employers I have the following suggestions to offer:

"Safety committees among your employees will reduce your accidents.

"There can be no successful accident prevention and reduction without study of the causes.

"Plant inspection at regular intervals by your safety committees is a splendid preventive of accidents.

"As a matter of good business, a record should be kept of all accidents, no matter how small or how big, and particularly as to the causes, frequency and cost."

Suitable Clothing for Women Workers.

The ever-increasing employment of women and girls at occupations heretofore almost exclusively filled by men has presented additional problems to the safety engineer. One of the most important conditions to provide against is the wearing of loose and flowing garments. The greatest preventive of industrial accidents to the newcomers in our industries is provided by the wearing of serviceable and suitable clothing, designed not only to protect women and girls from the grime and dirt of work, but more especially to furnish a covering that shall render them less liable to accidents from moving machinery. This covering should include, as the New Jersey Department of Labor has repeatedly advised, the wearing of proper head dress. The serious effects very often attendant upon the non-use of such a covering for the hair was again forcibly brought to our attention during the past month when we received a report of a female silk worker being partly scalped when her hair became twisted in the revolving shaft of a winding machine.

Some of Germany's After-War Plans

Counting on Doing Great Things with its
Fleet, Which Has Been Kept Safe at Home

(From the "Scientific American")

Reports of concerted efforts by the Germans to regain their lost foreign trade come to us from time to time and show that the plans for re-establishing their trade connections after the war are being pushed vigorously. The need for American manufacturers and exporters to emulate their example becomes apparent when the care and magnitude of their plans are considered. The passage of the Webb-Pomerene Bill places an effective weapon in our hands for meeting this trade offensive. At the same time, American exporters should take cognizance of the fact that similar legislation has recently been passed in Great Britain and France, though doubtless, the continuance of the effective co-operation now existing between these governments and ours will be extended long after the war, especially in foreign trade.

One of the latest moves in Germany is the establishment of the Europäische Handelsgesellschaft (European Commercial Co.), with headquarters at Bremen. This organization consists of numerous associated advisory committees representing the various trades importing raw materials and exporting finished manufactured products. Thus cotton firms established at Bremen a company to act as one of these advisory bodies for the purchase of raw cotton in Russia, Rou-

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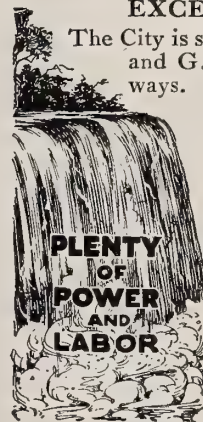
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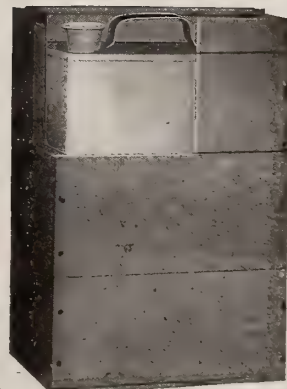
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mania and the adjacent countries. Membership in this company is limited to firms which in the three years preceding the war annually imported at least 10,000 bales of cotton for their own use or, as accredited representatives in Germany of foreign firms, negotiated the sale for import to Germany of at least 20,000 bales annually.

Even more recently a similar organization was founded at Hamburg, though whether it is merely a branch of the company at Bremen or an independent rival is not certain. The purpose of the organization is building, operation of railroads and street railways, construction of irrigation, harbor and electric plants, as well as factories of every description, exploitation of plantations, ore fields, etc., formation of subsidiary companies and participation in them and granting credits. The authorized capital of the organization is 25,000,000 marks, and the following firms are among those represented on the board of directors: Nord Deutsche Bank, Dresdner Bank, Hamburg-American Line, Warburg & Co., Hugo Stinnes, Ltd., Rhenish Westphalian Coal Syndicate, Krupps Gruson Werk, Friedrich Krupp, German South Sea Islands Trading and Planting Co., and Siemens & Schukert.

An Important Firm

The firm of Stinnes appears to be one of the most important individual firms in this Hamburg organization and seems likely to develop into a most colossal enterprise after the war. It is mainly concerned with ores, but has extended its ramifications to almost all branches of trade that ultimately serve its main business, and has established almost complete independence. It owns its own inland water-transport and controls other canal shipping companies under other names. Before the war the concern had eighteen seagoing vessels of medium tonnage, while under construction it had eleven other steamers with a total tonnage of 125,000. It is

thus independent of post-war freight rates. Recently a company was formed at Hamburg to operate the Stinnes Company's fleet, not only for the special purposes of the parent company, but also for trade in raw materials of all kinds, particularly all products of mines and foundries, agriculture and of the chemical and electrical industries, most especially in relation to foreign trade in them.

Preventing Competition

Firms engaged in the export of identical products are organized, as far as possible, for the purpose of preventing ruinous competition, combining transport facilities and propaganda, etc. Binding agreements are, however, being made only slowly and reluctantly. However, firms in Germany are planning to do their best, at the outset, to secure neutral representation, especially through Holland, in those countries where the economic provisions of the Paris Conference will be carried out most vigorously, and also in parts of South America. Especial efforts are to be made, in this manner, to retrieve the lost trade in automobiles, motor tractors, agricultural machinery, etc. These efforts should not be ignored by the Allied countries, it must not be considered that they do not constitute a real menace. Some German firms have been able, despite all the disasters that have befallen the foreign trade of their country as a whole, to maintain or even increase their influence overseas. Notable among these is the Rhenish Iron and Steel Combination, which, through its associated or controlled company, Bocker & Co., according to a Dutch report, has since 1915 acquired possession of the greater part of the wolfram mines in South America, and is now exploiting them through its agency in Buenos Aires, of course, with a view to the subsequent needs of the parent country.

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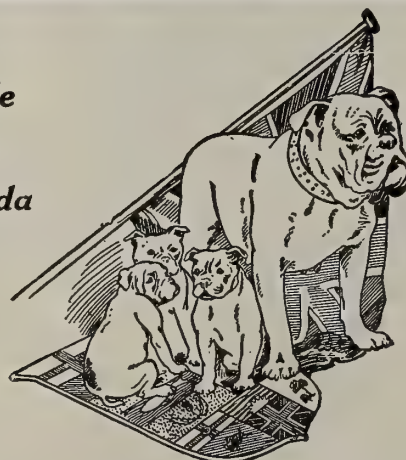
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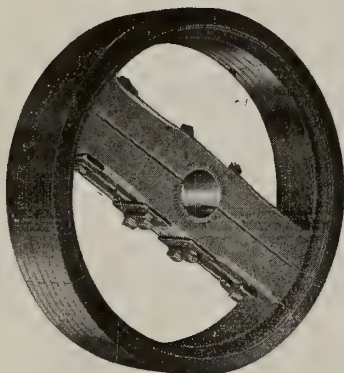
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The extent of the pre-war porcelain manufacturing industry in Germany is well known. This business, of course, has been severely affected by the war; but careful plans have recently been made to re-establish it in its former vigor. This is being accomplished to a large extent by the amalgamation of many small concerns into a few powerful organizations. The Bank of Thuringia, for example, has bought the greater part of the 3,000,000 marks share capital of the Weiden Porcelain Manufacturing Co. (formerly Bauscher Bros.). To the same concern belong also the porcelain manufacturing firms Kahla, Hermsdorf, and Konigszelt and the Lorens Hutschenreuther Co., which, toward the end of 1917, bought the firm of Paul Muller and now proposes to raise its share capital from 2,000,000 to 3,000,000 marks. Another group of porcelain firms, controlled by the banking firm of Arnhold Bros. of Dresden, includes the C. M. Hutschenreuther Co. of Hohenberg and the Tielsch Co. of Altwasser. Still a third group, controlled by the Dresden Bank, includes the Philipp Rosenthal Co. and the firm of J. Zeidler & Co.

Depend on Mercantile Marine

Great dependence is placed by the Germans on the large fleet of mercantile vessels which they have safe in their own harbors and to which, according to various reports, they have made large additions since the outbreak of the war. Moreover, the Germans claim to be expecting the return of those of their vessels which were confiscated by the Allied countries as each of them entered the war. However, they may be disappointed in this hope, the cessation of hostilities will witness the freeing of German vessels interned in the harbors of such countries as are still neutral. On this merchant fleet, then, Germany has placed great hopes for recovering her trade and among other plans for the future expansion of her shipping is the establishment of a ship mortgage bank in Hamburg. Even before the war the advisability of creating such an institution was frequently discussed in the German press, but it remained for the stimulus of the war to bring the proposal into prominence, and plans have now taken such definite shape that the establishment of such an institution will be witnessed in the near future with a capital of 10,000,000 marks.

Hitherto a special bank for advancing money on the security of ships did not exist in Germany, although its need was widely felt. Smaller shipowners who required money for building and operating their ships were obliged to apply to foreign institutions of the kind, particularly to those in Holland. Ship mortgage banks managed with care, but at the same time liberally, can do much for the assistance of small shipowners, especially those engaged in the so-called tramp trade and in internal shipping, as well as the owners of steam fishing fleets.

Orders for New Tonnage

The Reichstag recently passed a bill for the restoration of the German mercantile marine, and one of the first results has been a number of orders for new tonnage by the more important steamship companies. It is said that shipbuilding yards have recently concluded contracts for the construction of more than 150,000 tons. A supplementary estimate laid before the Reichstag lately contained a vote of 300,000 marks as the first instalment of financial assistance to the mercantile marine under the Restoration Bill.

These are but a few of the methods by which Germans hope to win back their trade. America must be prepared for stupendous efforts and the keenest competition, and our first endeavors should involve legislative preparations and the immediate plans for combination under the Webb-Pomerene law.

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A Compact of Industrial Peace

How the Employers and Wage Earners of the Standard Oil Co., Through Representatives, Work Out Problems by Democratic Tests of Equality and Self Determination

By W. C. TEAGLE

President, Standard Oil Co.

(From "The Nation's Business")

If there is any good to come out of this war—and we must feel that some good will come, fearful though the cost to the world must be—surely one of the lessons we have all learned is that the day of government by force is gone. That is a procedure which the world would never put up with again, either as between nations, or communities, or classes.

Henceforward, industrial peace, like peace between nations, must depend upon mutual sympathy and understanding between all sections of industry. In connection with this war, as in no previous period in history, industry has come to be recognized as absolutely essential, and with this has come a recognition of the place for true democracy in Industry.

The prosperity and continued development of a business is in some proportionate degree dependent upon each individual. No position, conscientiously filled, is unimportant. Every task is essential, and the place of the wage-earner as an important and integral part of the organization should have at least the elements of permanence in it. This means not only recognition of his rights to fair treatment and fair wages, but freedom to be heard on these points, to state his needs, and in full and loyal spirit of co-operation work out their solution.

Where large numbers are employed, direct personal contact between an individual employer and the individual employees becomes impractical. So we come face to face with the proposition of industrial representation—the establishment of a system whereby an approach at least is made to the ideals of Democracy, and employers and wage-earners come together, "all men free and equal," to work out the common problems of their state—the business in which they are jointly engaged.

Larger Mutual Understanding

The result aimed at is a larger mutual understanding in the light of which the just aspirations of the men will be advanced by the employers, just as surely as all demands that are shown to be unreasonable and unfair will be withdrawn and dismissed by the men.

We do not regard this as paternalism, still less as philanthropy. We believe that the more contented a workman is—the freer he is from worry, the more thoughtful, progressive and ambitious he is—the better his work will be, and the better it will be for everyone, however remotely concerned.

This is the aim which the Standard Oil Company (New Jersey) has had before it in developing the plan of industrial representation, insurance, sick and accident benefits, and annuities, recently put before its employees.

I am glad to say here that we were not driven to our new departure by any industrial unrest. Our men were contented and the sky was clear in so far as we were concerned, but it seemed to us a good opportunity to set about creating an atmosphere which would make trouble impossible for all time. Fortunately we avoided any suspicion that the plans we were introducing were aimed to take the place of possible increases in wages, as we were able to announce at the same time a new increase in wages all along the line. It has always been our settled policy to pay wages as high as or a little higher than paid by other employers in the locality. Our wages, in fact, have been increased five times since August, 1915, the aggregate increase in the case of common labor going as high as 98%.

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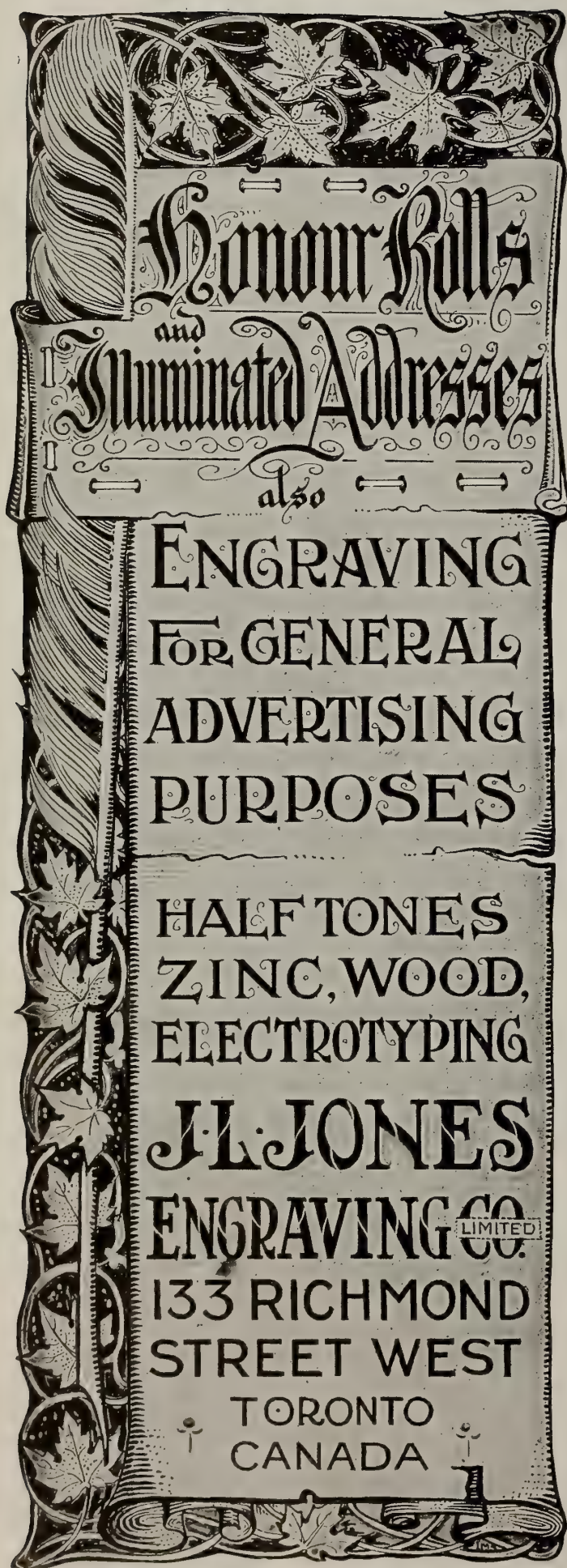
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It is now a part of our agreement with the wage-earners that in the future all changes in pay, whether up or down, shall be made in conference with the representatives of the men affected. These joint conferences, by which free representation of the men will be assured in all matters affecting them, will, we believe, prove a most important and helpful factor in our labor relationship.

Elected by Ballot

The representatives are elected from among the men by secret ballot. The whole body of employees at each plant being divided into groups or divisions, with approximately two representatives for each group of 300 or less, with additional representatives for larger groups. These elected representatives are expected not only to take up the grievances of individuals or groups, but to co-operate with the management with reference to all that concerns working conditions in the plant and also the company's relation to living conditions in the community. All such grievances and plans will be considered freely in joint conferences where the number of company representatives will never exceed the number of employees' representatives.

We believe that these representatives will play an invaluable part in giving the men a feeling that they are a real part of the organization, that they have the company back of them, and that the company is not some unknown, unapproachable power, but consists of men like themselves, with whom they can talk and before whom they can lay their troubles.

This same principle is carried out in connection with our Employment Department. We have a list of offences agreed to by the representatives, plainly posted in the works, which sets forth certain definite grounds on which suspension or discharge may be incurred; but nobody can be suspended or dismissed out of hand by any foreman. The foreman merely reports the case with recommendations to the Employment Department, by which all further action is taken. In the case of offences other than those listed, the first infringement calls for formal warning. The second infringement is reported to the Employment Department, by whom the man may be suspended, or discharged, or, it may be, transferred, or found wholly innocent. In any case where an employee feels he has been unjustly treated or subjected to unfair conditions, he has the right of appeal, either in person or through his elected representative, to the general superintendent, and right on up to the highest officials of the company, if the regular course of procedure with the foreman and the Employment Department should fail to bring about satisfactory settlement.

Other Welfare Work

In somewhat a similar spirit, our insurance, sick benefits and annuities plan aims to give the employees a feeling of permanence in their work and a definite place and a definite share in the organization. Every employee of more than a year's standing is insured for a minimum of \$500. This insurance is re-adjusted on an ascending scale each year, so that after being in the employment of the company for five years or more, the insurance amounts to 12 months' full pay, with a maximum of \$2,000. Employees do not have to undergo any physical examination and all premiums are paid by the company, no tax of any kind falling on the workman insured. Furthermore, the insurance does not necessarily lapse if the employee leaves the service of the company. He can continue his insurance, still without the need of going through a medical examination, by making his own arrangements with the insurance company for the payment of the regular premiums called for on a man of his age. All suspicion,



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therefore, that this insurance might be used unfairly to hold men in the company's employ is dissipated.

In the case of sickness, employees receive half wages during illness for periods ranging from six weeks, in the case of those whose term of service is less than 2 years, to 52 weeks in the case of employees of 10 years' service and over.

In all this, as I have said, we aim to make the wage-earner feel that he is an integral and permanent part of our organization, and to recognize him as such. Just as our interest in him is not limited to the work he does from day to day, so his interest in the company is not limited to his daily wage, but by his loyal service he is building for himself an assured and an increasing share in his prosperity. Capital and industry are partners.

The Workers Sign the Contract

Effect of the Foregoing Plan on the Employees of Standard Oil—Throughout the Plant There is a Noticeable Change in the Disposition of the Men, Who Recognize That They Are a Vital Part of the Company

By JOSEPH A. McDEVITT

Employees' Representative, Standard Oil Co.

When the notices of a conference between the representatives of the employees and those of the company were first posted, there was apparent among the majority of the former a disposition to regard the sincerity of the proposal with the proverbial grain of salt. In fact many regarded the suggestion as a pharisaical proposition at which polite nothings would be exchanged without any practical benefit accruing to either party.

However, a friendly rivalry was stirred among the employees resulting in the election, by the Australian ballot, of representatives from the several departments of the Bayway Refinery. The entire corps then awaited with doubting minds the outcome of this unusual conference.

The Reward of Confidence

I remember well the surprised faces of the men who quizzed us on our return to the refinery and listened to our enthusiastic report of the generous provisions made for our future, and more especially the prominence that had been given to the employees through their representatives. I freely admit that as a representative I did not, in even the slightest degree, hope to be considered with the respect that was shown us. In fact, we representatives were completely ignorant of the real purpose of the conference, and, as a consequence, the surprise was as joyous as it was sudden and startling. The very generous provisions of insurance, of sick and accident benefits made without a penny of cost to us, fell indeed most pleasantly on our ears, so that at the time we failed to comprehend or appreciate the advantages which a real representation in the company meant to us.

The real meaning dawned but slowly. But shortly I realized that here were men, prominent in position and strong in purpose and accomplishment endeavoring manfully to show us that our welfare and their welfare were of the same woof and warp that made up the fabric of this great company; who assured us that both sides were misunderstood and had made mistakes and that now was the time to extend the hand of friendship as a pledge of future sincerity and equality.

We grasped that hand held out to us with earnest purpose of doing our part and with strong hope that their sincerity was genuine. We did not have long to wait the proof

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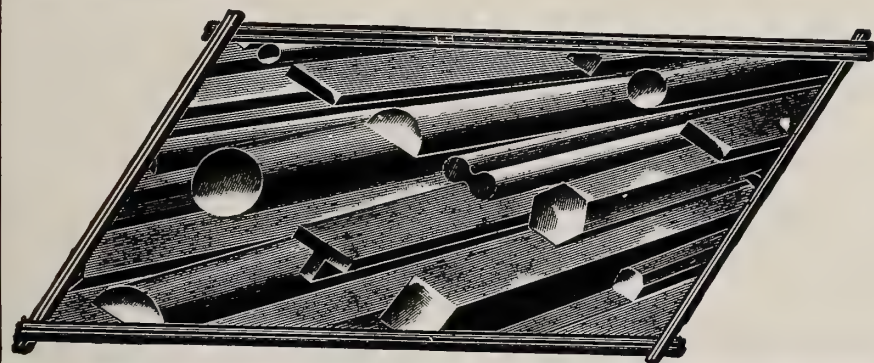
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of their purpose. Within one week of the conference, a delegation of the representatives of the employees called upon Mr. R. T. Hewitt, superintendent of the Bayway Refinery, and asked that a change in the time of payment of wages be made in order to accommodate the workers on the night shift. We believed we had cogent reasons for requesting the change and so enumerated them. We were listened to with attention and departed feeling that our plea had fallen upon sympathetic ears. The matter was at once taken in hand with the head office, and within the month the change asked became a reality.

I believe that this initial success of mutual understanding between the company and the men has accomplished more to establish a lasting confidence among the latter than volumes of literature. For the men are not unaware that a change that affects a payroll of 2,500 entails a great amount of labor and expense and would not be considered unless there was an underlying purpose of making conditions for them as pleasant and as accommodating as possible.

A Change in Disposition

Throughout the plant, there is a noticeable change in the disposition of the men. This may be explained by the fact that the men know, as they never knew before, that they are a very vital part of the company, and, what is more important, they are so recognized and are represented. The moral effect of this develops in the worker an impression fully as strong as the fact that he is protected both as to himself and family in the generous provisions by the company in the event of sickness, accident or death.

On the 16th of April last, one day after the insurance plan of the company had gone into effect, an employee of the Bayonne Refinery died. Within a few days the bereaved family received a company check for five months' full pay, representing the insurance of an employee of two years' service.

There is another feature of the generosity of the company which has impressed itself strongly on the employees. This is the sick benefit provision which allows half pay for a period of 31 weeks. There is no denying the fact that the state of mind either retards or hastens the recovery of the sick. Is it not a very satisfying and consoling thought to the man confined to his bed that those dependent on him will not suffer privation while his earning powers are impaired? Will not the thought that a generous company has made provisions for those near and dear to him, engender in him a loyalty and a steadfastness that no other human power could call forth? If it fails of its purpose, then that man is a poor apology and one of the drones that it is best to rout out of the hive.

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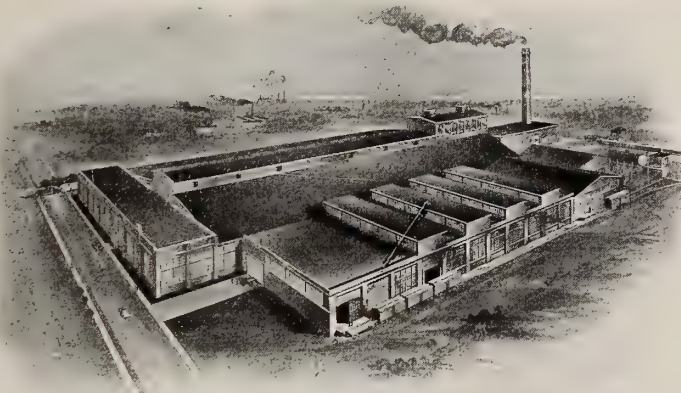
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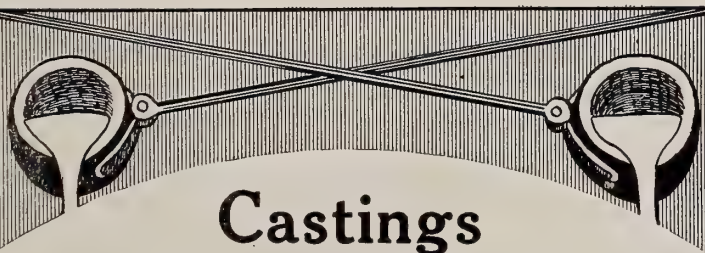
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256

Financing the Next Victory Loan

Bank Resources, as Exemplified by the Footings of Bank Statements, Should Show Large Increases Prior to Floating of Second Loan

By H. M. P. ECKARDT

(From the Montreal "Journal of Commerce")

The period over which the instalments of last year's Victory Loan were spread comprised five months, the last payment being due on May 1, 1918. In this period the chartered banks collected from the subscribers and placed to the credit of the Minister of Finance the very large sum of \$400,000,000. It is a curious fact that the bank statement for May 31, which reflects the final payment on the Loan, shows the total assets of the banks at practically the same amount as on November 30, 1917, just before the loan payments commenced. On May 31, 1918, the assets of the banks were \$2,319,358,000; and on November 30, 1917, \$2,320,270,000. This apparently supports the contention that very large domestic war loans can be floated and the payments thereon completed without unduly inflating the bank position—providing that the banks themselves are not required to subscribe for the bonds and that the bank loans to subscribers are short-dated and kept within reasonable amounts. However, it should be remembered that while bank assets and liabilities may not be greatly expanded during the period in which the loan subscribers are taking up and paying for their bonds, nevertheless there usually is in evidence throughout the three or four months immediately preceding a great flotation of this kind a considerable swelling of the bank totals, as a result of preliminary borrowing from the banks by Government. The Finance Minister delivers to the banks his short-date notes amounting to \$25,000,000 or \$50,000,000. These notes when discounted by the banks swell their assets to that extent and at the same time they create deposit balances to a like amount which figure first in the account of the Minister and later in the accounts of corporations and individuals to whom he transfers the funds. Such transactions repeated month by month usually serve to make a considerable impression on the bank returns.

Financing in the Interval

This is what we may expect in July, August and September. It was intimated recently at Ottawa that the Victory Loan proceeds being practically exhausted, the Government had made arrangements with the banks whereby the latter undertook to advance funds to the Treasury for war purposes in monthly instalments. It is generally supposed that the advances under this agreement commence in July, and that the total amount to be supplied is \$150,000,000. If these figures are correct, one would expect to see a steady rise in bank assets from June to September from this cause. Then the credit operations incidental to the harvest movement invariably have a tendency to swell the bank figures, as a mass of fresh credit-instruments are called into play to finance the crops. So considering these factors it would seem that unless they are neutralized by others working in the opposite direction, bank resources in Canada, as exemplified by the footings of the bank statements, should show large increases prior to the launching of the second Victory Loan; also that the new loan itself, even if the amount of subscriptions equals or exceeds the total subscribed to the first Victory Loan may not have any remarkable effect in further increasing the bank assets.

With reference to the exhaustion of the proceeds of the first Victory Loan, the amounts shown each month in the bank statement as "due to the Dominion Government, after deducting advances for credits, pay-lists, etc.," show appar-



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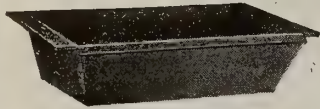
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ently that the Government's balances in the banks were increasing from February to May. Thus, on December 31, 1917, after the initial payment of 10 per cent. on \$400,000,000 of subscriptions had been made, the Government's bank accounts showed a credit balance of \$65,998,000. On January 31, 1918, after a large proportion of the total subscription had been paid, the balance had risen to \$106,497,000. Next month as a result of heavy disbursements, it dropped to \$69,419,000. Since February there has been an increase each month. On March 31, the balance had risen to \$89,606,000; on April 30 it was \$94,771,000; and on May 31 at \$117,664,000. It had reached a new high record. Although this upward trend of the balance due to the Treasury by the banks, considered superficially, does not point to exhaustion of Victory Loan proceeds, yet when allowance is made for the probability that the large balances shown by the banks as due to the Dominion Government on May 31, were partly represented by the special loans granted by the Government to the banks on approved securities; it will be seen that the credit balance of the Minister in the banks, against which he might draw cheques, would perhaps be considerably less than the amount shown in the bank statement. The May statement of the Finance Department shows the issues of Dominion notes against approved securities at \$95,145,000. This represents an increase of \$18,500,000 during April and May. Now, these special issues of Dominion notes are understood to represent loans by the Government to the banks on the pledge of British Treasury bills or other securities. Thus, if a bank turned approved securities amounting to \$5,000,000 into the Dominion Treasury, it would perhaps show the \$5,000,000 loan as an item due to the Dominion Government; but although the amount would appear in the bank statement as a balance at credit of the Government, the Minister obviously could not issue his cheques against such balance. So, although the Government balances, as appearing on the May bank return, look large, it probably was the case that only a part thereof were really available for current needs.

Short Date Loans

So far as the banks are concerned, they will have performed the hardest part of their work in connection with the new Victory Loan when they have completed their series of short-date loans to the Minister. When the actual proceeds of the subscriptions are received the banking position will presumably be relieved as a result of repayment by the Government of its short-date borrowings. Such repayment also tends to correct the inflation produced prior to the flotation of the loan—for the bank's debit the Finance Minister's account with the maturing temporary loans and thus both their assets and liabilities are correspondingly reduced.

In case of the loans to be granted to the Treasury in July, August and September, the least effort is required when the Government disburses the proceeds to Canadian manufacturers and merchants who in turn transfer them to other Canadian payees. When the money is thus kept in the Dominion, the various payments largely represent mere shiftings or transfers of credit from one account to another in the same bank or from one bank to another. But, unfortunately, it is practically impossible to keep the proceeds of these loans permanently at home. To be sure the Minister of Finance on receiving the proceeds, may cheque them out to Canadian corporations and individuals who have furnished supplies to the various Government departments. However, these parties, or some of them, frequently find it necessary to procure in the United States machinery, and perhaps a considerable part of the raw materials required for working up the Government contracts.

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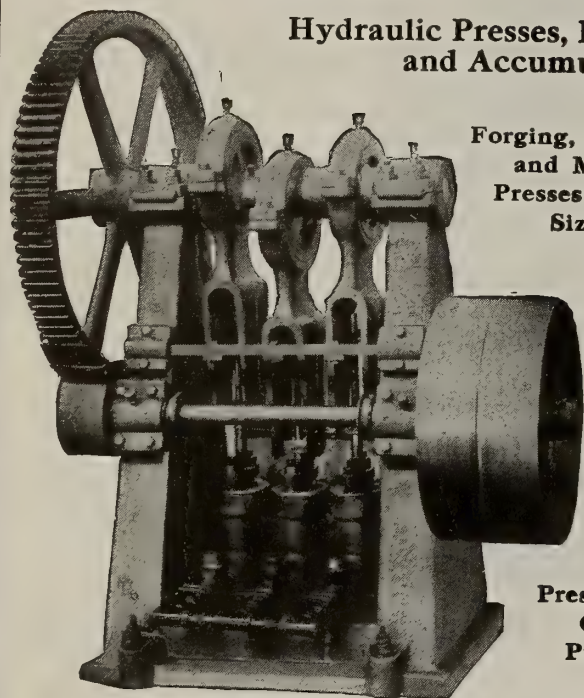
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Consequently these payees must send to the States a part of the money received from the Dominion Government. This means that their bankers are obliged to find New York funds; and with the exchange market in its present condition it is no light task to provide the American exchange.

There are evidences that working men and other savers in all parts of the Dominion have been preparing for the new Victory Loan. Since the \$95,000,000 decrease in January, 1918, the "notice" deposits of the banks have been rapidly recovering the lost ground. From \$900,000,000 on January 31, the total has risen to \$947,000,000. This represents an average of roundly \$12,000,000 per month; and if the increase can be maintained at the same average rate until October, the whole of the amount withdrawn for Victory Loan Payments in January will have been recovered.

Re-adjusting Business to a Peace Basis

(Continued from page 75.)

which the United States was responsible for 47 per cent., the United States and Canada together for 64 per cent., and the United States, Canada and Mexico for 80 per cent. Therefore, these low-wage countries which are such a menace to our after-war industrial position must come to us for their silver. Coming to us they must pay our price; and whatever further grip we need upon the situation is afforded by the fact that our buying price is the price at which we will buy, and which accordingly other buyers must meet.

Let us then fix a minimum price of, say, \$1.29 an ounce for silver. It might further be desirable to raise the price gradually to a higher level than this, since the actual ratio of production to gold was in 1916 only seven to one. The price of silver could thus eventually be fixed at the ratio of ten to one, or \$2.00 per ounce, adding \$100,000,000 a year above present silver values to our wealth. Such a price for silver, fixed and enforced by us through our ability to buy all that might be offered, would raise costs in the countries which are on a silver basis, and competing on that basis with us in wheat and other necessities. It would raise wages in China and India, making these countries less dangerous competitors. Rarely in the economic history of the world has there been an opportunity to kill two such fat birds with one stone, increasing the value of our own products and those of our American friends and European Allies, forcing up at the same time the wage-cost of our raw-product competitors.

Fall in Wages Gradual

With stabilized prices and a policy of great accumulations, very necessary yet taking perhaps a whole generation to realize, we would create immediately so great and varied a demand for labor as to absorb at good wages all the civilians and soldiers freed from their present occupations. The steadily falling prices would enable us more widely to compete. Other highly developed countries with the single exception of Japan, have suffered far more severely from the war than have we; and, owing to their own great needs, they are not likely to underbid us in the neutral markets.

The fall in wages under this plan would be gradual. It is not the level of wages that counts, but their certainty and their purchasing power. This plan insures a demand for labor and a steady equivalent in the purchasing power of labor's recompense. If, as wheat drops from a \$2.20 level to a \$1.10 level, \$4.00 wages fall to \$2.00, they will still buy as much wheat and as much of everything else. The bur-



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den of taxation distributed over a population increasing in number and productive power will also relatively fall, thus making it easier to compete.

If when peace comes we do not find employment for all who want it, we shall face trouble far more serious than the war, for as to the ultimate outcome of the latter there can be no misgivings. If we do not adopt the policy of accumulating staples, we shall be unable to give employment to all until after industry has been readjusted. If our prices do not come down, and our competitors' costs go up, we shall not be able to compete in the world's markets. The suggestions which I put forward provide for bringing about every one of these necessary conditions.

Mr. Just Speaks on Trade with Russia

(Continued from page 64.)

firm was so impressed with the trade possibilities of Russia that they were maintaining their organizations, though at present they were inactive.

Hon. Mr. Davis referred to the insuperable difficulties in the way of export trade to-day. Canada and Russia were two countries in which were found unlimited natural resources, largely undeveloped. He also referred to the lack of shipping, and the risks which the manufacturer would encounter in exporting products under existing conditions. If Canada is to develop export trade, the Government and financial institutions must help. There must be a well-laid plan of organization.

Mr. Shapley stated that the difficulty with export business is that manufacturers are fully occupied with home trade. We must have machinery provided by the Canadian Trade and Commerce Department which will create the confidence necessary to make export business a success. The reason manufacturers of munitions succeeded was that they knew that the Government is behind them and that the money will be forthcoming.

Mr. Shapley then moved that the chairman be empowered to appoint a small committee to inquire into the whole situation, and take such steps as may appear expedient under the circumstances. This motion was unanimously carried.

How the German Circle System Operates

(Continued from page 70.)

over-rate. Germany has been built up by combination and national co-operation, and has shown the world the power such a system confers upon a nation. She has used her power for evil, and to obtain domination of the world by cruelty and fraud, but she has proved the proverb, "Unity is Strength," in a way we little dreamed possible.

The British Empire has unique opportunities for adopting such a system, by reason of the fact that within its confines it possesses practically all the raw materials necessary for production; it also possesses vast quantities of labor and every known climate. We have the power, if we care to use it, of securing to ourselves the benefit of these vast resources, and by so doing consolidating our position, and at the same time utilizing our strength for the peace of the world and benefit of mankind.

To attain these objects organization is essential, and a system of imperial interchange of ideas, also a comprehensive system of technical education and national research. Individualism, which has largely built up the power of the British Empire and is a national characteristic, need not

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Persons having business with any of the Inspectors should communicate with them at the Parliament Bldgs., Toronto.

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TRADES AND LABOUR BRANCH

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All steam boilers built in, or entering the Province of Ontario, and boilers exchanged or repaired, are subject to Government Inspection as prescribed in the Steam Boilers Act, 3 George V., C. 61.

Before any work of repair or alteration is commenced on any boiler, notice must be sent to the Department stating the nature and extent of the repairs or alterations proposed to be made. If the Chief Inspector should consider such repairs or alterations of an extensive character, the boiler must be inspected in accordance with the Regulations by an Inspector authorized under the Act.

All communications should be addressed to the Steam Boiler Branch, Department of Public Works, Parliament Bldgs., Toronto.

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Everyone operating a STATIONARY steam plant of 50 h.p. or over in the Province of Ontario must hold a Stationary Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Everyone operating a HOISTING steam plant working at a pressure of 20 pounds or over irrespective of horse power, and used for hoisting in structural operations or excavating purposes, in the Province of Ontario, must hold a Hoisting Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Application forms for obtaining STATIONARY or HOISTING Engineers' Certificates, may be had upon applying to the Chairman.

HON. F. G. MACDIARMID, W. C. MCGHIE,
Minister of Public Works and Highways, Chairman of Board.
W. A. RIDDELL, M.A., Ph.D., Superintendent.

Established
1849

BRADSTREET'S

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Executive Offices: Nos. 346 and 348 BROADWAY, N.Y. CITY, U.S.A.

The Bradstreet Company gathers information that reflects the financial condition and the controlling circumstances of every seeker of mercantile credit. Its business may be defined as of the merchants, by the merchants, for the merchants. In procuring, verifying, and promulgating information, no effort is spared, and no reasonable expense considered too great, that the results may justify its claim as an authority on all matters affecting commercial affairs and mercantile credit. Its offices and connections have been steadily extended, and it furnishes information concerning mercantile persons throughout the civilized world. Subscriptions are based on the service furnished, and are available only by reputable wholesale, jobbing and manufacturing concerns, and by responsible and worthy financial, fiduciary, and business corporations. Specific terms may be obtained by addressing the Company at any of its offices. Correspondence invited.

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THOS. C. IRVING, Gen. Man. Western Canada, Toronto

be interfered with in any way, but could and would be greatly assisted by combination.

We have to face a colossal national debt. This can only be paid by increased production, but we must realize that production without markets for disposal of the goods is useless, and as we shall inevitably be faced with competition of the severest nature, we shall, if we are to succeed, be forced to take advantage of every opening for trade that is available.

The markets of the Empire should have the first consideration, and we should see to it that we secure these for our own people by every means in our power. We should also see that our manufacturers obtain the raw materials of the Empire at the lowest possible rates, and that in no case should foreign competitors be placed on an equal footing with ourselves with regard to them.

If we can adapt ourselves to these conditions we can face the future with confidence.

Japanese Control of B.C. Fishing Industry

(Continued from page 66.)

Overcharged with great issues and grapplings with large cargo-carrying problems, little attention has been paid to the rapid strides being made by the Japs in British Columbia since the inception of the war.

The little brown man has not only built, but he has used some of the thousands and thousands of dollars he made last year during the big run of salmon and the fall sales to purchase coasting craft, and now it is no uncommon occurrence to have a captain of a boat, when you ask to charter the vessel, respond that he must ask his partner first, and then, to your surprise, he calls up some prominent Japanese and has a confab before he can give you an answer.

The Japanese are wise enough to know that if they keep the white captains on the boats it pays better than to expose the fact that the white men have ceased to hold controlling stock in the boat.

The cessation of the war and the resumption of business on a pre-war basis, with the ocean tonnage of the world back to a point where the requirements are being taken care of, is liable to expose the fact that while Canada was attending to the ocean-going merchantmen the coasting vessels that will be required to place the natural resources in a position to export have been taken over by the Japanese.

Not only are the Japanese alive to every opportunity in British Columbia, but on the Pacific as well. It is only a few weeks since two new passenger liners have been built in the Nagasaki yards of the Mitsui Bishi Co., and placed on the trans-Pacific run between Vancouver and the Orient, and will replace two large liners that formerly operated between Vancouver and Japan, but are now on the South American run between Japan and Buenos Ayres.

Japan's exports to Canada in the past two years have jumped up 1,500 per cent.

Death of Sieur Gignac

The death occurred at Quebec on August 8 of Sieur Joseph-Honore Gignac, head of the firm of J. H. Gignac Limited, lumber and planing mill operators. The late Sieur Gignac held the office of chairman of the Quebec Branch of the Canadian Manufacturers Association for at least two years, and was an esteemed member of the Executive Council. His presence will be missed at the annual meetings of the Association, where he was always a regular attendant.

McClary's

Specialists in

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EDMONTON

HAMILTON
SASKATOON



**Are your motors running hot? Have them
inspected regularly.**

BECAUSE the average good electric motor gives practically no trouble some manufacturers proceed to work it to death. For instance—the air vents in the rotor and stator may get fouled with dust and grease—meaning no air circulation—a heated motor—finally a burnt-out motor. Periodic inspection would save many a motor—save breakdowns and tedious costly repairs. Remember—"a stitch in time, saves nine"—how about *your* motors?

Toronto Hydro-Electric System

226 Yonge St.

Branch—Gerrard and Carlaw

Buyers' Guide to Canadian Manufactures

A List of Articles which will Enable the Purchaser to Know the Manufacturers of Made-in-Canada Goods. For Rates of Insertion in this Department write to the Advertising Manager of "Industrial Canada," Toronto

ABRASIVE MATERIALS

- *Canadian Hart Wheels, Ltd., Hamilton, Ont.
- *Dominion Abrasive Wheel Co., New Toronto, Ont.

ABRASIVES

- *D. A. Brebner, Ltd., Toronto.

ACCOUNT BOOKS

- *The Brown Bros., Ltd., Toronto.

ACETYLENE BURNERS

- *The Prest-O-Lite Company.

ACETYLENE GAS

- *The Prest-O-Lite Company.

ACETYLENE GAS BURNERS

- Economic Acetylene Burner Co., Toronto.

ACIDS

- *The Grasselli Chemical Co., Ltd., Toronto.
- *The Nichols Chemical Co., Ltd., Montreal.

ADVERTISING NOVELTIES

- Lawson & Jones, Ltd., London, Ont.

AERATED BEVERAGES

- Charles Gurd & Co., Ltd., Montreal, Que.

- J. J. McLaughlin, Ltd., Toronto.

AIR COMPRESSORS

- *Canadian Ingersoll-Rand Co., Montreal, Que.
- *Smart-Turner Machine Co., Ltd., Hamilton, Ont.

AIR DRILLS

- *Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

ALCOHOL

- *Hiram Walker & Sons, Limited, Walkerville, Ont.

ALUMINUM

- *Northern Aluminum Co., Ltd., 1805 Traders Bank, Toronto.

ALUMINUM CASTINGS

- *Tallman Brass & Metal Co., Hamilton, Ont.
- *United Brass & Lead, Ltd., Toronto

AMMONIA

- Canadian Ammonia Co., Ltd., Toronto.

ANGLE BARS

- *Burlington Steel Co., Ltd., Hamilton, Ont.
- *Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.
- *The Steel Company of Canada, Limited, Hamilton, Ont.

ASBESTOS

- *Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEATHING

- *Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEET AND PISTON PACKINGS

- *Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS STEAM PIPE AND BOILER COVERINGS

- *Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS TEXTILES

- *Eureka Mineral Wool & Asbestos Co., Toronto.

ATTACHMENT PLUGS

- *Crouse-Hinds Co., Ltd., Toronto.

AUTOGRAPHIC REGISTERS

- *Autographic Register Co., Ltd., Montreal.

AUTOGRAPHIC REGISTER SYSTEMS

- Business Systems, Ltd., Toronto

AUTOMATIC SCREW MACHINE PRODUCTS

- *United Brass & Lead, Ltd., Toronto

AUTOMOBILE ACCESSORIES

- *Northern Electric Co., Limited, Montreal.
- *Tallman Brass & Metal Co., Hamilton, Ont.

AUTOMOBILE PARTS

- *Dominion Forge & Stamping Co., Walkerville, Ont.
- *United Brass & Lead, Ltd., Toronto

AWNING CORD (cotton)

- Hamilton Cotton Co., Hamilton, Ont.

AXLES

- Canada Forge Co., Ltd., Welland, Ont.
- Guelph Spring & Axle Co., Ltd., Guelph, Ont.

AXLES, carriage and automobile

- Guelph Spring & Axle Co., Ltd., Guelph, Ont.

BABBITT METAL

- Alonso W. Spooner, Limited, Port Hope, Ont.

- *Dominion Metal Co., Ltd., Sherbrooke, P.Q.

- *The Canada Metal Co., Toronto.

- *Tallman Brass & Metal Co., Hamilton, Ont.

BACON

- E. W. Fearman Co., Ltd., Hamilton, Ont.

BAGS

- *Scythes & Co., Ltd., Toronto.

BAGS, Cotton

- The Canadian Bag Co., Ltd., Montreal, Que.

BAGS, jute

- The Canadian Bag Co., Ltd., Montreal, Que.

- *Scythes & Co., Ltd., Toronto.

BAGS, travelling

- J. Eveleigh & Co., Ltd., Montreal, Que.

- Lamontagne, Ltd., Montreal, Que.

- The M. Langmuir Mfg. Co., of Toronto, Ltd., Toronto.

BAKING JAPAN

- *Berry Bros., Ltd., Winnipeg, Man.

BAND RESAWS

- *Canada Machinery Corporation, Limited, Galt, Ont.

- *P. B. Yates Machine Co., Ltd., Hamilton, Ont.

BAND SAWS

- *E. C. Atkins & Co., Inc., Hamilton, Ont.

BANK AND OFFICE RAILINGS

- *The Geo. B. Meadows, Toronto, Wire, Iron & Brass Works Co., Ltd., Toronto.

- *Canada Wire and Iron Works, Hamilton, Ont.

BANK FITTINGS

- The Canadian Office & School Furniture Co., Ltd., Preston, Ont.

BANK RAILINGS and CAGES

- *Canada Wire and Iron Goods Co., Hamilton, Ont.

- *Dennis Wire & Iron Works Co., London.

BANK SIGNS AND FITTINGS

- *Tallman Brass & Metal Co., Hamilton, Ont.

BARRELS, steel, and containers

- *Smart-Turner Machine Co., Ltd., Hamilton, Ont.

BARS, iron

- London Rolling Mill Co., Limited, London, Ont.

BARS, steel

- London Rolling Mill Co., Limited, London, Ont.

BASEBALL GOODS

- A. J. Reach Co., Brantford, Ont.

BATHS, enamelled

- Amherst Foundry Co., Ltd., Amherst, N.S.

BATTERIES, dry

- The Canadian National Carbon Co., Ltd., Toronto.

BATTERIES, Flashlight

- The Canadian National Carbon Co., Ltd., Toronto.

BATTERIES, Storage

- The Canadian National Carbon Co., Ltd., Toronto.

BEARINGS

- *The Chapman Double Ball Bearing Co., Ltd., Toronto.

- *The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEARINGS, bronze

- *Tallman Brass & Metal Co., Hamilton, Ont.

- *United Brass & Lead, Ltd., Toronto

- BEARINGS, pillow block and upright

- *Canadian Fairbanks-Morse Company, Ltd., Montreal, Que.

- *Dodge Mfg. Co., Ltd., Toronto.

- *The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEARINGS

- *The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEDS, camp folding

- *Otterville Mfg. Co., Ltd., Otterville, Ont.

BEEF

- E. W. Fearman Co., Ltd., Hamilton, Ont.

BELTING, chains

- *Canadian Link-Belt Co., Toronto.

- *Dodge Mfg. Co., Ltd., Toronto.

- *The Goldie & McCulloch Co., Ltd., Galt, Ont.

BELTING, elevator

- *Canadian Consolidated Rubber Co., Ltd., Montreal, Que.

- Dunlop Tire & Rubber Goods Co., Ltd., Toronto.

BELTING, leather

- The Beardmore Belting Co., Ltd., Toronto.

- *J. L. Goodhue & Co., Danville, P.Q.

- *Sadler & Howarth, Montreal.

- *The D. K. McLaren Belting Co., Ltd., Montreal.

- *The J. C. McLaren Belting Co., Ltd., Montreal.

BELTING, rubber

- *Canadian Consolidated Rubber Co., Ltd., Montreal, Que.

- *Dunlop Tire & Rubber Goods Co., Ltd., Toronto.

- *Gutta Percha & Rubber, Limited, Toronto.

BELTING, stitched cotton duck

- *Dominion Belting Co., Ltd., Hamilton.

BENT GOODS

- The Crown Lumber Co., Woodstock, Ont.

BICYCLES AND ACCESSORIES

- *Canada Cycle and Motor Co., Ltd., Toronto.

BISCUITS

- The Montreal Biscuit Co., Montreal, Que.

BLACK SHEETS

- *A. C. Leslie & Co., Montreal.

BLANKETS

- Slingsby Mfg. Co., Ltd., Brantford, Ont.

- J. Walsham & Son, Ltd., Bolton, Ont.

BLANKETS, horse

- Slingsby Mfg. Co., Ltd., Brantford, Ont.

- J. Walsham & Son, Limited, Bolton, Ont.

BLASTING ACCESSORIES

- Canadian Explosives, Ltd., Montreal, Que.

BLEACHING POWDER

- Canadian Salt Co., Ltd., Windsor, Ont.

BLOWERS

- *Sheldons, Ltd., Galt, Ont.

- *The Canadian Blower & Forge Co., Limited, Kitchener, Ont.

- BOARDS, wood, binder, fibre specialties

- *Beveridge Paper Co., Limited, Montreal.

BOATS OF ALL KINDS

- Peterboro Canoe Co., Ltd., Peterboro, Ont.

BOILER COMPOUND and OILS

- Electric Boiler Compound Co., Ltd., Guelph, Ont.

BOILER PRESERVATIVES

- *Beveridge Paper Co., Limited, Montreal.

BOILERS

- *M. Beatty & Sons, Ltd., Welland, Ont.

- *Darling Bros., Montreal.

- *Goldie & McCulloch Co., Limited, Galt, Ont.

- John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

- *Polson Iron Works, Ltd., Toronto.

- J. & R. Weir, Montreal, Que.

- Taylor-Forbes Co., Ltd., Guelph, Ont.

- *The Waterous Engine Works Co., Ltd., Brantford.

- BOILERS, hot water or steam.

- Steel & Radiation, Ltd., Toronto.

- Warden King, Ltd., Montreal, Que.

- BOILERS, steam.

- *Jenckes Machine Co., Sherbrooke, Que.

- *The Goldie & McCulloch Co., Ltd., Galt, Ont.

- Steel and Radiation Ltd., Toronto.

- Warden King, Ltd., Montreal, Que.

- *The Waterous Engine Works Co., Ltd., Brantford, Ont.

- BOILERS, steam and brass work

- *The Waterous Engine Works Co., Ltd., Brantford, Ont.

BOILER STANDS

- Anthes Foundry Ltd., Toronto.

BOLSTERS

- *Canadian Car & Foundry Co., Ltd., Montreal, Que.

BOLTS

- *The National Acme Mfg Co., Montreal, Que.

- *United Brass & Lead, Ltd., Toronto

BOLTS AND NUTS

- *The Canadian Tube & Iron Co., Ltd., Montreal, Que.

- *The Steel Company of Canada, Limited, Hamilton, Ont.

- Starr Mfg. Co., Ltd., Dartmouth, N.S.

- *United Brass & Lead, Ltd., Toronto

BOOKBINDERS

- R. G. McLean, Toronto.

- *The Brown Bros., Ltd., Toronto.

BOOKCASES

- *Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

BOOKCASES, sectional (Gunn)

- The George McLagan Furniture Co., Ltd., Stratford, Ont.

BOOKLETS

- R. G. McLean, Toronto.

BOOKS, blank

- *The Brown Bros., Ltd., Toronto.

BOOTS AND SHOES

- Ames-Holden-McCreedy, Ltd., Montreal, Que.

- J. Leckie Co., Ltd.

- The John Ritchie Co., Ltd., Quebec, Que.

BOXES

- *Crouse-Hinds Co., Ltd., Toronto.

BOXES, cellular board:

- *The Thompson & Norris Co. of Canada, Ltd., Niagara Falls.

BOXES, rattle and soap

- The Arlington Co. of Canada, Ltd., Toronto.

BOXES, steel shop

BRASS BOLTS AND NUTS

*Tallman Brass & Metal Co., Hamilton, Ont.
*United Brass & Lead, Ltd., Toronto

BRASS AND BRONZE WIRE

*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

BRASS, BRONZE and ALUMINUM LETTERS

*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS ENGRAVERS

Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS FOUNDERS AND FINISHERS

*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.
*United Brass & Lead, Ltd., Toronto

BRASS GOODS

*Penberthy Injector Co., Ltd., Windsor.
*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*Mueller Mfg. Co., Sarnia.
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Ltd., Toronto.
*The Kerr Engine Co., Ltd., Walkerville, Ont.
*Tallman Brass & Metal Co., Hamilton, Ont.
*United Brass & Lead Ltd., Toronto.

BRASS PLATES

Geo. Booth & Son., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS RODS

*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS RODS, SHEETS AND PLATES

*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

BRASS SIGNS AND MEMORIALS

*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS TUBING, seamless

Canadian Seamless Wire Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WIRE

Canadian Seamless Wire Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WORK, church

Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS WORK, special

Bawden Machine Co., Ltd., Toronto.

*H. Mueller Mfg. Co., Ltd., Sarnia, Ont.

*Tallman Brass & Metal Co., Hamilton, Ont.

*Booth-Coulter Copper & Brass Co., Ltd., Toronto.

*The Watrous Engine Works Co., Ltd., Brantford, Ont.

*United Brass & Lead, Ltd., Toronto

BRICK

National Brick Co. of Laprairie, Laprairie, P.Q.

Port Credit Brick Co., Port Credit, Ont.

National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, pressed
National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, rubbing
*Canadian Hart Wheels, Limited, Hamilton, Ont.

BRICK, sewer
National Brick Co. of Laprairie, Laprairie, P.Q.

BRIDGES, Railway and Highway

*Dominion Bridge Co., Montreal.

*Hamilton Bridge Works Co., Ltd., Warkville, Ont.

*The Canadian Bridge Co., Ltd., Hamilton, Ont.

*McGregor & McIntyre, Ltd., Toronto.

*Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.

*Manitoba Bridge & Iron Works, Ltd., Winnipeg.

BROOMS

Simms, T. S., & Co., Limited, St. John, N.B.

Stevens-Hepner Co., Limited, Port Elgin, Ont.

BRONZE, SHEETS, RODS, PLATES

*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

BRUSHES

Simms, T. S., & Co., Limited, St. John, N.B.
Stevens-Hepner Co., Limited, Port Elgin, Ont.

BRUSHES, carbon

Canadian National Carbon Co., Ltd., Toronto.

BUCKET TANKS

*Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.
*The Bennett & Wright Co., Ltd., Toronto, Ont.

BUCKLES, shoe and coat

Parmenter & Bulloch Co., Limited, Gananoque, Ont.

BUILDING BLOCKS, vitrified, salt glazed

Standard Clay Products, Ltd., St. Johns, Que.
Toronto.

BUILDING FELT and PAPER

*Eureka Mineral Wool & Asbestos Co., Toronto.
*The Barrett Co., Ltd., Toronto and Montreal.

BUILDERS, ship

*Polson Iron Works, Limited, Toronto.
J. & R. Weir, Montreal, Que.

BURLAPS

The Canadian Bag Co., Limited, Montreal, Que.
*Scythes & Co., Ltd., Toronto.

BURLAPS, decorative

Dominion Oil Cloth Co., Limited, Montreal, Que.

CABLE ACCESSORIES

*Crouse-Hinds Co., Ltd., Toronto.
CABLES, electric light, power, telephone and telegraph

*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

CABLES, transmission and telephones

*Eugene F. Phillips Electrical Works, Ltd., Montreal, Que.

CABLES, Transmission and Cable

*Northern Electric Co., Limited, Montreal, Que.

CABLES, wire
The Dominion Wire Rope Co., Ltd., Montreal, Que.

*The B. Greening Wire Co., Ltd., Hamilton, Ont.

CALENDARS, ADVERTISING NOVELTIES, etc.

Lawson & Jones, Limited, London, Ont.

CAMERAS

Canadian Kodak Co., Limited, Toronto.

CAMPERS' OUTFITTERS

Slingsby Mfg. Co., Ltd., Brantford, Ont.

CANADA SILVER

*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

CANOEES

Peterboro Canoe Co., Ltd., Peterboro, Ont.

*Canadian Canoe Co., Ltd., Peterborough.

CANS, baking powder, etc.

American Can Co., Montreal and Hamilton.

A. R. Whittall Can. Co., Ltd., Montreal.

CANS, fruit
American Can Co., Montreal and Hamilton.

A. R. Whittall Can. Co., Ltd., Montreal.

CANS, iron, lead and putty
A. R. Whittall Can. Co., Ltd., Montreal.

CANS, ROVING, ETC., fibre
*Beveridge Paper Co., Limited, Montreal.

CANS, tin
A. R. Whittall Can. Co., Ltd., Montreal.

American Can Co., Montreal and Hamilton.

CANVAS

*Scythes & Co., Ltd., Toronto.

CAPS, cloth
John W. Peck & Co., Ltd., Montreal, Ont.

CARBIDE
*Canada Carbide Co., Ltd., Montreal, Que.

*Union Carbide Co. of Canada, Ltd. Works, Welland, Ont. Head Office, Toronto.

CARBONS, Electric
Canadian National Carbon Co., Ltd., Toronto.

CARBONS (headlight)

*Crouse-Hinds Co., Ltd., Toronto.

CARBONIC ACID GAS

Canadian Carbonate Co., Montreal.

CARD RECORD SYSTEMS

*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

CARPETS AND RUGS

Toronto Carpet Mfg. Co., Limited, Toronto.

CARPETS AND RUGS, Axminster and ingrain

Toronto Carpet Mfg. Co., Limited, Toronto.

CARPETS AND RUGS, Brussels and Wilton

Toronto Carpet Mfg. Co., Limited, Toronto.

CARPET YARNS, worsted and wool

Toronto Carpet Mfg. Co., Limited, Toronto.

CARRIAGES, baby, etc.

Canada Furniture Manufacturers, Ltd., Woodstock, Ont.

CARRIERS

*Richards-Wilcox Canadian Co., Limited, London, Ont.

CARRIERS, box and barrel

*Canadian Mathews Gravity Carrier

CARRIERS, brick

*Canadian Mathews Gravity Carrier Co., Limited, Toronto.

*Richards-Wilcox Canadian Co., Ltd., London, Ont.

CABS

*Canadian Car & Foundry Co., Ltd., Montreal, Que.

*National Steel Car Co., Limited, Hamilton, Ont.

CABS, industrial

Hamman Steel Car and Engineering Works, Hamilton.

CARTONS, lithographed

Harris Lithographing Co., Toronto.

CASTINGS

*Tallman Brass & Metal Co., Hamilton, Ont.

CASTINGS, aluminum

*Booth-Coulter Copper & Brass Co., Limited, Toronto.

*Crouse-Hinds Co., Ltd., Toronto.

*United Brass & Lead, Ltd., Toronto

*Tallman Brass & Metal Co., Hamilton, Ont.

CASTINGS, brass

*Booth-Coulter Copper & Brass Co., Limited, Toronto.

*Crouse-Hinds Co., Ltd., Toronto.

*Tallman Brass & Metal Co., Hamilton, Ont.

*United Brass & Lead, Ltd., Toronto

CASTINGS, grey iron

*Canadian Rumely Co., Limited, Toronto, Ont.

*Crouse-Hinds Co., Ltd., Toronto.

*Dodge Mfg. Co., Toronto.

*Canadian Car & Foundry Co., Ltd., Montreal, Que.

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.

John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

CASTINGS, malleable iron

*Crouse-Hinds Co., Ltd., Toronto.

*Galt Malleable Iron Co., Ltd., Galt, Ont.

CASTINGS, steel

*Canadian Steel Foundries, Ltd., Montreal, Que.

*Dominion Steel Foundry Co., Ltd., Hamilton, Ont.

*Hull Iron and Steel Foundry, Ltd., Hull, P.Q.

*Wm. Kennedy & Sons, Ltd., Owen Sound.

CATALOGUE MAKERS

Grip, Ltd., Toronto.

CAUSTIC SODA

Canadian Salt Co., Ltd., Windsor.

CELLBOARD

Adams Cellboard Co., Toronto.

CEMENT GUNS

Steel and Radiation, Ltd., Toronto.

CEMENT, HIGH TEMPERATURE
*Beveridge Paper Co., Ltd., Montreal.

CHAINS, for elevators, conveyors and drives

*Canadian Link-Belt Co., Toronto.

CHAIRS

*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

CHAIRS, assembly hall

Stratford Mfg. Co., Ltd., Stratford, Ont.

CHAIRS, folding

Stratford Mfg. Co., Ltd., Stratford, Ont.

CHAIRS, rattan and upholstered
Imperial Rattan Co., Ltd., Stratford, Ont.

CHAIR SEATS, fibre

*Beveridge Paper Co., Limited, Montreal.

CHECKS, swing checks, etc

*Mueller Mfg. Co., Ltd., Sarnia.

CHEMICALS

*The Grasselli Chemical Co., Ltd., Toronto.

*The Nichols Chemical Co., Ltd., Montreal, Que.

CHEMISTS, INDUSTRIAL

*Milton Hersey Co., Montreal.

CHICLETS and CHEWING GUM

Canadian Chewing Gum Co., Ltd., Toronto.

CIGARETTES and TOBACCO

Philip Morris & Co., Limited, Montreal, Que.

CIRCULAR CUTTERS, solid steel

*Galt Knife Co., Ltd.
The Peter Hay Knife Co., Limited, Galt, Ont.

CIRCULAR SAWS

*E. C. Atkins & Co., Inc., Hamilton, Ont.

CLAM SHELL BUCKETS

*M. Beatty & Sons, Ltd., Welland, Ont.

CLOCKS, TIME

*International Business Machines, Limited, Toronto.

CLOCKS, WATCHMEN'S

*The Bennett & Wright Co., Ltd., Toronto, Ont.

CLOSET SEATS

*Goderich Organ Co., Goderich, Ont.

CLOTHING

John W. Peck & Co., Ltd., Montreal, Que.

CLOTHING, leather and sheepskin lined coats

*A. R. Clarke & Co., Ltd., Toronto.

CLOTHING, Mackinaw

The Carss Mackinaw Clothing Co. Ltd., Orillia, Ont.

CLOTHES LINES, cotton

Hamilton Cotton Co., Hamilton, Ont.

CLUTCHES

*Dodge Mfg. Co., Ltd., Toronto.

CLUTCHES, conveyors

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

COAL

*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.

Standard Fuel Co., Toronto.

COAL CUTTERS

*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

COBALT OXIDE

The Coniagas Reduction Co., Ltd., St. Catharines, Ont.

COCOA and CHOCOLATE PREPARATIONS

Walter Baker & Co., of Canada, Ltd., Montreal, Que.

COFFEE

S. H. Ewing & Sons, Montreal, Que.

COLD DRAWN SHAPES, flats, squares and hexagons

*The Canadian Drawn Steel Co., Ltd., Hamilton, Ont.

*Union Drawn Steel Co., Limited, Hamilton, Ont.

COLD STORAGE DOORS

John Fillock & Co., Ltd., Toronto

COLLAR BUTTONS
The Arlington Co. of Canada, Ltd., Toronto.

COLLARS

The Standard Shirt Co., Limited, Montreal, Que.

COLLARS, coated linen

Parsons & Parsons Canadian Co., Hamilton, Ont.

COLLARS, shaft

*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.

COLORS

brandram-Henderson, Limited.
Montreal, Que.
A. Ramsay & Son Co., Montreal,
Que.

COMBS, fine dressing and name
The Arlington Co. of Canada, Ltd.
Toronto.

COMMERCIAL STATIONERY

*Brown Bros., Ltd., Toronto.

**CONCRETE COATINGS, PAINTS,
ETC.**

*Beveridge Paper Co., Ltd., Mont-
real.

*Trussed Concrete Steel Co. of
Canada, Limited, Walkerville, Ont.
The Imperial Varnish & Color Co.
Limited, Toronto.

**CONDUITS FOR INTERIOR
WIRING**

*Conduits Company Ltd Toronto.

CONDULET BOX FITTINGS

*Crouse-Hinds Co., Ltd., Toronto.

CONDULETS (Marine)

*Crouse-Hinds Co., Ltd., Toronto.

CONFECTIONERY

Ganong Bros., Ltd., St. Stephens,
N.B.

Moirs, Limited, Halifax, N.S.

The Montreal Biscuit Co., Montreal.

CONTAINER BOARD—strong con-

tainer

Bathurst Lumber Co., Ltd., Bath-
urst, N.B.

CONTRACTOR'S PLANT

*M. Beatty & Sons, Ltd., Welland.

*Canadian Allis-Chalmers, Limited,
Toronto.

CONVEYORS

*Canadian Link-Belt Co., Toronto.

*Canadian Mathews Gravity Carrier
Co., Toronto.

*Dodge Mfg. Co., Ltd., Toronto.

COPPER

*Engene F. Phillips, Electrical
Works, Limited, Montreal.

*Booth-Coulter Copper & Brass Co.,
Limited, Toronto.

**COPPER, SHEETS, PLATES, BARS,
RODS**

*Brown's Copper and Brass Rolling
Mills, Ltd., New Toronto.

COPPER SHEETS AND PLATES

*Booth-Coulter Copper & Brass Co.,
Limited, Toronto.

*Tallman Brass & Metal Co., Ham-
ilton, Ont.

COPPERSMITHS

*Booth-Coulter Copper & Brass Co.,
Limited, Toronto.

COPPER TUBING, seamless

Canadian Seamless Wire Co., Ltd.,
Toronto.

*Booth-Coulter Copper & Brass Co.,
Limited, Toronto.

COPPER WIRE

Canadian Seamless Wire Co., Ltd.,
Toronto.

*Standard Underground Cable Co.
of Canada, Ltd., Hamilton, Ont.

CORKS

S. H. Ewing & Sons, Montreal, Que.

CORK CARPET

Dominion Oil Cloth Co., Ltd., Mon-
treal, Que.

CORRUGATED PAPER BOXES

Adams Cellboard Co., Toronto.

Corrugated Paper Box Co., Ltd.,
Toronto.

*Hinde & Dauch Paper Co., To-
ronto.

*Martin Corrugated Paper & Box
Co., Limited, Toronto.

*The Thompson & Norris Co. of
Canada, Ltd., Niagara Falls, Ont.

CORUNDUM, artificial

*D. A. Brebner, Ltd., Toronto.

CORSETS

Dominion Corset Co., Quebec, Que.

COTTONS

*Dominion Textile Co., Limited,
Montreal, Que.

*Montreal Cottons, Ltd., Valley-
field, P.Q.

COTTONADES

Hamilton Cotton Co., Hamilton, Ont.

COUPLERS

*Canadian Steel Foundries, Ltd.,
Welland, Ont.

COUPLINGS

*Canadian Bond Hanger & Coup-
ling Co., Alexandria, Ont.

*Dodge Mfg. Co., Ltd., Toronto.

CRANES

*Northern Crane Works, Walk-
erville, Ont.

CRANKSHAFTS

Canada Forge Co., Ltd., Welland,
Ont.

CREAM CHEESE, Ingersoll

The Ingersoll Packing Co., Limited,
Ingersoll, Ont.

CREAM SEPARATORS AND MILK**CLARIFIERS**

De Laval Dairy Supply Co., Peter-
boro, Ont.

The Renfrew Machinery Co., Ltd.,
Renfrew, Ont.

CREAMERY AND CHEESE FAC-

TORY MACHINERY AND SUP-

PLIES

De Laval Dairy Supply Co., Ltd.,
Peterboro, Ont.

CREOSOTED MATERIALS

*The Barrett Co., Ltd., Toronto and
Montreal.

CRUSHED STONE

The Hagersville Contracting Co.,
Limited, Hagersville, Ont.

CRUSHING ROLLS

*Jenckes Machine Co., Sherbrooke,
Que.

CUPOLAS

*Sheldons, Ltd., Galt, Ont.

*Northern Crane Works, Limited,
Walkerville, Ont.

CUPS, presentation

Standard Silver Co., Toronto.

CUPS, grease and oil

*The Canadian Winkley Co., Ltd.,
Windsor, Ont.

CURLED HAIR

*Delany and Pettit, Ltd., Toronto.

CURTAINS, chenille

Hamilton Cotton Co., Hamilton,
Ont.

CUTLERY

Standard Silver Co., Toronto.

CUTTERS, (Machine)

*Pratt & Whitney Co., Dundas.

DECK PLUGS (electric marine)

*Crouse-Hinds Co., Ltd., Toronto.

DENIMS

Hamilton Cotton Co., Hamilton,
Ont.

DERAILS

*Canadian Hart Wheels, Limited,
Hamilton, Ont.

DESIGNERS

Ontario Engraving Co., Hamilton,
Ont.

DESIGNERS and PRINTERS OF

BOOKLETS, ETC.

Grip, Ltd., Toronto.

DESKS

*Office Specialty Mfg. Co., Ltd.,
Newmarket, Ont.

DESSICATED VEGETABLES

Grahams Limited, Belleville.

DIES

*John Whitfield Co., Toronto.

DINING ROOM SUITES

The George McLagan Furniture
Co., Limited, Stratford, Ont.

DIES

*Butterfield & Co., Rock Island,
P.Q.

*Pratt & Whitney Co., Dundas.

DISINFECTING APPARATUS

Spramotor Co., London, Ont.

DOOR HANGERS

*Richards Wilcox Canadian Co.,
Ltd., London, Ont.

DREDGES

*M. Beatty & Sons, Limited, Wel-
land, Ont.

DRESSING, belt

Sadler & Haworth, Montreal, Que.

DRESS AND CLOAK TRIMMINGS

J. Henry Peters Co., 1 Mincing St.,
Toronto.

DRIFT BOLT DRIVERS

*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

DRILL PRESSES

*Canada Machinery Corporation,
Limited, Galt, Ont.

DRILL SHARPENERS

*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

DRILLS

*John Morrow Screw & Nut Co.,
Limited Ingersoll, Ont.

*Pratt & Whitney Co., Dundas.

DRILLS, core

*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

DRILLS, pneumatic

*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

DRILLS, rock

*Canadian Ingersoll Rand Co.,
Montreal, Que.

DRIFT BOLTS OR SPIKES

London Rolling Mill Co., Limited,
London, Ont.

DROP FORGINGS

*Canadian Billings & Spencer, Ltd.,
Welland, Ont.

DROP HAMMERS

*Canada Machinery Corporation
Limited, Galt, Ont.

DRUMS, steel, and containers

*Smart-Turner Machine Co., Ltd.,
Hamilton, Ont.

DRY COLORS

P. D. Dods & Co., Ltd., Montreal.

The Imperial Varnish & Color Co.,
Limited, Toronto.

R. C. Jamieson & Co., Ltd., Mon-
treal, Que.

Standard Paint & Varnish Co.,
Ltd., Windsor, Ont.

DUMB WAITERS

Turnbull Elevator Mfg. Co., To-
ronto.

DURABLE WIRE ROPE

The Dominion Wire Rope Co., Ltd.,
Montreal, Que.

DYNAMITE

Canadian Explosives, Limited, Mon-
treal, Que.

DYNAMOS

Consolidated Electric Co., Limited,
Toronto.

*Jones & Moore Electric Co., Ltd.,
Toronto.

*The Canadian Crocker-Wheeler
Co., Limited, St. Catharines, Ont.

DYNAMOS, plating

*Jones & Moore Electric Co., Ltd.,
Toronto.

EIDERDOWN

Galt Knitting Co., Ltd., Galt.

ELECTRIC APPLIANCES

*Canadian Crocker-Wheeler Co.,
Limited, St. Catharines, Ont.

*Canadian Westinghouse Co., Ltd.,
Hamilton, Ont.

ELECTRIC APPLIANCES, fibre, all

purposes

*Beveridge Paper Co., Limited,
Montreal.

ELECTRICAL COMPOUNDS

Standard Paint Co. of Canada, Ltd.,
Montreal, Que.

ELECTRIC COOKING APPLI-

ANCES

*Canadian General Electric Com-
pany, Ltd., Toronto.

ELECTRIC LAMPS

Packard Electric Co., Limited,
Toronto.

ELECTRIC PLATE WARE

Roden Bros. Ltd Toronto

ELECTRIC BRANDING TOOLS

*The Clemens Electrical Corpora-
tion of Canada, Ltd., Hamilton, Ont.

ELECTRIC RAILWAY EQUIPMENT

*Crouse-Hinds Co., Ltd., Toronto.

ELECTRODES, Carbon

Canadian National Carbon Co.,
Ltd., Toronto.

ELECTROPLATING

*United Brass & Lead, Ltd., Toronto

ELECTRO PLATING

Central Press Agency, Toronto.

ELECTRICAL SUPPLIES

*Canadian General Electric Com-
pany, Ltd., Toronto.

*Canadian Westinghouse Co., Ltd.,
Hamilton, Ont.

*Jones & Moore Electric Co., Ltd.,
Toronto.

*Northern Electric Co., Limited,
Montreal, Que.

ELECTRIC SOLDERING IRON

*The Clemens Electrical Corpora-
tion of Canada, Ltd., Hamilton, Ont.

ELECTRO-SILVER PLATED

WARE

Standard Silver Co., Toronto.

ELEVATING MACHINERY

*Canadian Link-Belt Co., Toronto.

*Canadian Mathews Gravity Carrier
Co. Toronto.

ELEVATORS

*Jenckes Machine Co., Sherbrooke,
Que.

*Mackinnon, Holmes & Co., Ltd.,
Sherbrooke, P.Q.

Turnbull Elevator Manufacturing
Company Toronto.

*The Waterous Engine Works Co.,
Ltd., Brantford, Ont.

*Northern Crane Works, Limited
Welland, Ont.

ELEVATORS FOR ALL PUR-

POSES

*The Waterous Engine Works Co.,
Limited, Brantford, Ont.

ELEVATOR GATES AND DOORS

Turnbull Elevator Mfg. Co., Ltd.,
Toronto.

ELEVATOR GUARDS

*The Geo. B. Meadows, Toronto

Iron and Brass Goods Works Co.,
Limited, Toronto.

*Canada Wire and Iron Works,
Hamilton, Ont.

ELEVATORS, hydraulic and electric

John McDougall Caledonian Iron
Works Co., Ltd., Montreal, Que.

EMERY DRESSERS and STANDS

*Canadian Hart Wheels, Limited,
Hamilton, Ont.

EMERY GRINDERS

*Canadian Hart Wheels, Limited,
Hamilton, Ont.

EMERY WHEELS

*Canadian Hart Wheels, Limited,
Hamilton, Ont.

EMERY WHEEL GUARDS

*Canadian Hart Wheels, Limited,
Hamilton, Ont.

ENAMELS

R. C. Jamieson & Co., Limited,
Montreal, Que.

The Imperial Varnish & Color Co.,
Ltd., Toronto.

ENAMEL MANUFACTURERS AND

DECORATORS

Standard Paint & Varnish Co.,
Ltd., Windsor, Ont.

ENAMEL AND TIN WARE

McClary Mfg. Co., London, Ont.

ENGINES

*E. Leonard & Sons, London, Ont.

*Goldie & McCulloch Co., Limited,
Galt, Ont.

J. & R. Weir, Montreal, Que.

*Jenckes Machine Co., Sherbrooke,
Que.

*Polson Iron Works, Limited, To-
ronto.

*Sheldons, Ltd., Galt, Ont.

*The Waterous Engine Works Co.,
Limited, Brantford, Ont.

ENGINES, gas and gasoline

*Canadian Fairbanks-Morse Com-
pany, Ltd., Montreal, Que.

*Goold-Shapley-Muir Co., Limited,
Brantford, Ont.

*Hamilton Motor Works Ltd.,
Hamilton.

*Massey-Harris Co., Ltd., Toronto.

ENGINES, gasoline, tractor, plowing

and threshing

*Sawyer-Massey Co., Ltd., Hamil-
ton, Ont.

ENGINES, hoisting

*M. Beatty & Sons, Welland, Ont.

EXCELSIOR

*Delany & Pettit, Ltd., Toronto.

EXCELSIOR PADS

*Delany & Pettit, Ltd., Toronto.
 *Parmenter & Bulloch Co., Limited
 Gananoque, Ont.

EXPERTS IN PATENT CAUSES

Ridout & Maybee, Toronto.

EXPLOSIVES, high

*Canadian Explosives Ltd., Montreal.

FACE PLATE JAWS

Ker & Goodwin, Brantford, Ont.

FACTORY SUPPLIES, cheese and creamery

De Laval Dairy Supply Co., Ltd.
 Montreal, Que.

FANS

*Sheldons, Limited, Galt, Ont.
 *The Canadian Blower & Forge Co.,
 Limited, Kitchener, Ont.

FASTENERS, belt

*Sadler & Haworth, Montreal, Que.

FELTS, pulp and paper makers

Ayers Limited, Lachute Mills, P.Q.

*Beveridge Paper Co., Limited
 Montreal.

FENCES AND GATES

*Dennis Wire & Iron Works Co.
 London, Ont.

*Canada Wire and Iron Works
 Hamilton, Ont.

FENCING AND GATES, woven wire

*Canada Wire and Iron Goods Co.
 Hamilton, Ont.

FENCING, wire

C. H. Johnson & Sons, Limited
 Montreal, Que.

FIBRE PAIS

*The E. B. Eddy Co., Ltd., Hull
 Que.

FIBRE, VULCANIZED, hard and flexible

*Beveridge Paper Co., Limited
 Montreal.

FILES

Henry Disston & Sons, Limited
 Toronto.

*The Nicholson File Co., Port Hope.

FILING CABINETS

*Office Specialty Co., Newmarket

*Office Specialty Mfg. Co., Ltd.,
 Newmarket, Ont.

FILING SYSTEMS

*Office Specialty Mfg. Co., Ltd.,
 Newmarket, Ont.

FILTER PAPERS

*Beveridge Paper Co., Limited
 Montreal.

FIRE ALARMS

*Northern Electric Co., Limited
 Montreal, Que.

FIRE APPARATUS

*R. S. Bickle Co., Woodstock, Ont.

FIRE BRICK

Dominion Fire Brick and Clay Pro-
 ducts, Ltd., Moose Jaw

FIRE BRICK AND CEMENT

*Beveridge Paper Co., Ltd., Mon-
 treal

FIRE BRICK AND CLAY

The Dominion Fire Brick and Clay
 Products, Ltd., Moose Jaw, Sask.

FIRE BRICK, JOINTLESS

*Beveridge Paper Co., Ltd., Mon-
 treal

FIRECLAY

*Jas. W. Foley & Co., St. John, N.B.

FIRE DOOR HARDWARE

*Richards Wilcox Canadian Co.
 Limited London, Ont.

FIRE DOORS

*A. B. Ormsby Co., Ltd., Toronto

*The Pedlar People Limited
 Oshawa

FIRE ENGINES

*R. S. Bickle Co., Woodstock, Ont.

Waterous Engine Works Co., Lim-
 ited, Brantford, Ont.

FIRE ESCAPES

*Canada Wire and Iron Goods Co.
 Hamilton Ont.

*Dennis Wire & Iron Works Co.,
 London, Ont.

*McGregor & McIntyre, Ltd., To-
 ronto

FIRE EXTINGUISHERS

*A. B. Ormsby Co., Ltd., Toronto

*Booth-Coulter Copper and Brass
 Co. Limited Montreal, Que.

*The Bennett & Wright Co., Ltd.,
 Toronto, Ont.

FIRE FIGHTING APPARATUS

*The Waterous Engine Works Co.,
 Limited Brantford, Ont.

FIRE HOSE

*Canadian Consolidated Rubber
 Co. of Canada, Limited, Montreal
 Que.

Dunlop Tire & Rubber Goods Co.,
 Ltd., Toronto.

*Gutta Percha and Rubber, Ltd.,
 Toronto.

FIRE PREVENTION MATERIAL

*Chicago Bridge & Iron Works,
 Bridgeburg, Ont.

*Eureka Mineral Wool & Asbestos
 Co., Toronto.

*The Bennett & Wright Co., Ltd.,
 Toronto, Ont.

FIRE PROOF WINDOWS AND DOORS

*A. B. Ormsby Co., Ltd., Toronto.

*Pedlar People, Ltd., Oshawa, Ont.

*Trussed Concrete Steel Co. of
 Canada, Limited, Walkerville, Ont.

FIRE SPRINKLER SYSTEMS

*Chicago Bridge & Iron Works,
 Bridgeburg, Ont.

*The Bennett & Wright Co., Ltd.,
 Toronto, Ont.

*Purdy Mansell Co., Toronto.

*H. G. Vogel Co., Montreal, Que.

FIRE AND WATER DEPARTMENT SUPPLIES

*Chicago Bridge & Iron Works,
 Bridgeburg, Ont.

The Garth Co., Montreal, Que.

FISH, Atlantic Sea-Foods

Maritime Fish Corporation Ltd.,
 Montreal, Que.

FITTINGS FOR SOIL PIPE

Anthes Foundry, Ltd., Toronto.

FITTINGS, steam

Warden King, Ltd., Montreal, Que.

FIXTURES

*Crouse-Hinds Co., Ltd., Toronto.

FLAGS

*Scythes & Co., Limited, Toronto.

FLEXIBLE COUPLINGS

*Canadian Bond Hanger & Coup-
 ling Co., Alexandria, Ont.

FLOODLIGHTS (electric)

*Crouse-Hinds Co., Ltd., Toronto.

FLOORING, hardwood

Seaman Kent Co., Ltd., Meaford,
 Ont.

FLOUR MILL MACHINERY

*Canadian Allis-Chalmers, Limited,
 Toronto.

FLUE LINERS

Standard Clay Products, Ltd., St.
 Johns, Que.

FORGES

*Canadian Blower & Forge Co., Ltd.,
 Kitchener, Ont.

*Sheldons, Limited, Galt, Ont.

FORGINGS

Canada Forge Co., Ltd., Welland.

*The Steel Co. of Canada, Limited,
 Hamilton, Ont.

FORGINGS, drop

*Canadian Billings & Spencer, Ltd.,
 Welland, Ont.

*Dominion Forge and Stamping
 Co., Walkerville, Ont.

FOUNDRY EQUIPMENT

*Northern Crane Works, Limited,
 Walkerville, Ont.

FOUNTAIN FRUITS and Juices

I. J. McLaughlin Ltd., Toronto.

FOUNTAINS, drinking

*Mueller Mfg. Co., Ltd., Sarnia.

FRICTION CLUTCH PULLEYS

*Dodge Mfg. Co., Ltd., Toronto.

FROGS AND CROSSINGS, manganese

Canadian Ramapo Iron Works, Ltd.,
 Niagara Falls, Ont.

FUEL

Standard Fuel Co., Toronto.

FUR GARMENTS, men's and women's

Holt, Renfrew, Ltd., Quebec.

FUR GOODS

John W. Peak & Co., Limited,
 Montreal, Que.

FUR TRIMMINGS, ornaments and buttons

J. Henry Peters Co., 1 Mincing St.,
 Toronto.

FURNACES

McClary Mfg. Co., London, Ont.

The Jas. Smart Mfg. Co., Limited,
 Brockville, Ont.

FURNACES, oil burning

*Mechanical Engineering Works,
 Montreal, Que.

FURNITURE, hall

The George McLagan Furniture Co.,
 Limited, Stratford, Ont.

FURNITURE, office

The Canadian Office and School
 Furniture Co., Ltd., Preston, Ont.

FURNITURE, reed and rattan

Imperial Rattan Co., Ltd., Strat-
 ford, Ont.

FUSE BOXES

*Crouse-Hinds Co., Ltd., Toronto.

FUSE PLUGS AND FUSES, refill-able

*The Clemens Electrical Corpora-
 tion of Canada, Ltd., Hamilton, Ont.

FUSES

*Economy Fuse and Mfg. Co., Mon-
 treal.

GALVANIZED IRON

*A. C. Leslie & Co., Montreal.

GALVANIZED SHEETS

*Dominion Sheet Metal Co., Ham-
 iltion, Ont.

GALVANIZERS

Acme Stamping & Tool Works, Ltd.,
 Hamilton, Ont.

*Ontario Wind Engine and Pump
 Co., Limited, Toronto.

*The Pedlar People, Ltd., Oshawa.

GASOLINE ENGINES

*Ontario Wind & Pump Co., Ltd.,
 Toronto.

De Laval Dairy Supply Co., Ltd.,
 Peterboro, Ont.

GASOLINE FIRE ENGINES

*The Waterous Engine Works Co.,
 Ltd., Brantford, Ont.

GASOLINE STORAGE SYSTEMS, special underground

S. F. Bowser & Co., Toronto.

*Steel Trough and Machine Co., Ltd.,
 Tweed, Ont.

GASOLINE

*The Imperial Oil Co., Limited,
 Toronto.

GAUGES

*Brown Engineering Corporation,
 Toronto.

*John Whitfield Co., Toronto.

GEARS, cut

*Brown Engineering Corporation,
 Toronto.

*Hamilton Gear & Machine, Toronto.

*Winnipeg Gear & Engineering
 Co., Ltd., Winnipeg.

GEARS, noiseless fibre, also rein-forced

*Beveridge Paper Co., Limited,
 Montreal.

GELATINE

Canada Gelatine Co., Ltd., Brant-
 ford.

GENERATORS

*Canadian Crocker-Wheeler Co.,
 Ltd., St. Catharines, Ont.

*Canadian Westinghouse Co., Ltd.,
 Hamilton, Ont.

GENERATORS, electric

*Canadian General Electric Com-
 pany, Ltd., Toronto.

GINS

The Melchers Gin & Spirits Dis-
 tillery Co., Ltd., Montreal, Que.

GLASSWARE

Dominion Glass Co., Limited, Mon-
 treal, Que.

GLASSWARE, cut

Roden Bros., Ltd. Toronto.

GLASS FOR BUILDINGS

Toronto Plate Glass Importing Co.,
 Limited, Toronto.

GLASS BENDERS

Toronto Plate Glass Importing Co.,
 Limited, Toronto.

GLASS, mirror

Toronto Plate Glass Importing Co.,
 Limited, Toronto.

GLOVES AND MITTS

*A. R. Clarke & Co., Ltd., Toronto

Craig, Cowan Co., Ltd., Toronto.

GLUE

Canada Glue Co., Ltd., Brantford

*Delany & Pettit Ltd. Toronto

GOLD-FILLED WIRE AND PLATE

Canadian Seamless Wire Co., To-
 ronto

GOLD AND SILVER REFINERS

Canadian Seamless Wire Co. To-
 ronto

GRAIN CRUSHERS (Rapid Easy)

J. Fleury's Sons, Aurora, Ont.

GRAPE JUICE

J. J. McLaughlin, Ltd., Toronto

The Welch Co., Ltd., St. Catharines

GRATES

*The Goldie & McCulloch Co., Ltd.
 Galt Ont.

GRAVITY CARRIERS

*Canadian Mathews Gravity Carrier
 Co., Toronto.

GRILLES, metal

*Canada Wire & Iron Goods Co.,
 Hamilton, Ont.

*Dennis Wire & Iron Works Co.,
 London, Ont.

GRINDER, bench

*Canadian Bond Hanger & Coup-
 ling Co., Alexandria, Ont.

GRINDERS, portable

*Canadian Ingersoll-Rand Co., Ltd.,
 Montreal, Que.

GRINDERS, Pedestal and Bench

*Canadian Hart Wheels, Limited,
 Hamilton, Ont.

GRINDING and Polishing Machinery

*Canadian Hart Wheels, Limited,
 Hamilton, Ont.

GRINDING WHEELS

*Canadian Hart Wheels, Limited,
 Hamilton, Ont.

*The Dominion Abrasive Wheel
 Co., Limited, New Toronto.

GRINDSTONES

*Richards-Wilcox Canadian Co.,
 Limited, London, Ont.

GUARDS (Condulet)

*Crouse-Hinds Co., Ltd., Toronto.

GUNN SECTIONAL BOOKCASES

The Geo. McLagan Furniture Co.,
 Limited, Stratford, Ont.

GUY ANCHORS

R. J. Coghlin Co., Ltd., Montreal.

GUY RODS

*Crouse-Hinds Co., Ltd., Toronto.

GYPNUM, crushed

*Albert Mfg. Co., Hillsborough, N.B.

GYPNUM PRODUCTS

*Manitoba Gypsum Co., Ltd., Win-
 niipeg, Man.

De Laval Dairy Supply Co., Ltd.,
 Peterboro, Ont.

HACK SAW BLADES

*E. C. Atkins & Co., Inc., Hamil-
 ton, Ont.

HACK SAW FRAMES

*E. C. Atkins & Co., Inc., Hamil-
 ton, Ont.

HACK SAW MACHINES

*E. C. Atkins & Co., Inc., Hamil-
 ton, Ont.

HALL FURNITURE

The Geo. McLagan Furniture Co.,
 Limited, Stratford, Ont.

HAMS

F. W. Fearman Co., Ltd., Hamil-
 ton Ont.

HANDLES (Axe, pick, sledge ham- mers, etc.)

The Lachute Shuttle Co., Limited,
 Lachute Mills, P.Q.

HEATERS

*Waterous Engine Works Co., Ltd., Brantford, Ont.

HEATERS, feed water

*Darling Bros., Ltd., Montreal.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

HEATING APPLIANCES

*C. A. Dunham Co., Ltd., Toronto.
*Darling Bros., Ltd., Montreal.
*Sheldons, Limited, Galt, Ont.
*The Canadian Blower & Forge Co., Limited, Kitchener, Ont.

HEATING SYSTEMS

*C. A. Dunham Co., Ltd., Toronto.

HEMLOCK, union and oak sole

Breithaupt Leather Co., Ltd., Kitchener, Ont.

HESSIANS

The Canadian Bag Co., Limited, Montreal, Que.
*Soythes & Co., Limited, Toronto.

HINGES

*The Steel Co. of Canada, Limited, Hamilton, Ont.

HOISTS

*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOISTS, electric and pneumatic

*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
*M. Beatty & Sons, Ltd., Welland, Ont.

HOISTING MACHINERY

*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOSE, fire

*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd., Toronto.

HOSE, half, Imperial

Kingston Hosiery Co., Ltd., Kingston, Ont.

HOSE, rubber

*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Limited, Toronto.

HYDRAULIC PRESSES

*Bawden Machine Co., Limited, Toronto.
*William R. Perrin, Ltd., Toronto.

HYDRO ELECTRIC PLANTS

*Canadian Allis-Chalmers, Limited, Toronto.

ICE CREEPERS

Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ICE-MAKING MACHINERY

The Linde Canadian Refrigeration Co., Limited, Montreal, Que.

INCUBATORS & BROODERS

Lee Mfg. Co., Ltd., Pembroke, Ont.

INGOT METALS

*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

INJECTORS, automatic and autopoitive

Penberthy Injector Co., Limited, Windsor, Ont.

INSERTED TOOTH SAWS

*E. C. Atkins & Co., Inc., Hamilton, Ont.

INSULATING COMPOUNDS

The Imperial Varnish & Color Co., Ltd., Toronto.

INSULATING PAPER AND FIBRE

*Beveridge Paper Co., Limited, Montreal.

INSULATORS

*Crouse-Hinds Co., Ltd., Toronto.

INTERLOCKING RUBBER TILING

*Gutta Percha & Rubber Mfg. Co. of Toronto, Limited, Toronto.

INVERTS

Standard Clay Products, Ltd., St. Johns, Que.

IRON

*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.

IRON, refined bar

Starr Mfg. Co., Ltd., Dartmouth, N.S.

IRON AND STEEL BARS

*Burlington Steel Co., Ltd., Hamilton, Ont.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

IRON STAIRWAYS

*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*McGregor & McIntyre, Ltd., Toronto.

IRONWORK, architectural

*Canadian Allis-Chalmers, Limited, Toronto.
*Canada Wire & Iron Goods Co., Hamilton, Ont.

IRONWORK, ornamental

*Canada Wire & Iron Goods Co., Hamilton, Ont.

IRON, LEAD AND PUTTY

A. R. Whittall, Montreal, Que.

JACKS

Globe Engineering Co., Ltd., Hamilton.

JAM, canned goods, etc.

E. D. Smith & Son, Limited.

JAPANS, enamels, etc.

A. Muirhead Co., Ltd., Toronto.

JAPANS, The Imperial Varnish & Color Co., Ltd., Toronto.**JIGS AND TOOLS**

*Brown Engineering Corporation, Toronto.

JOINTERS

*Canada Machinery Corporation, Limited, Galt, Ont.

*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

JELLY POWDER

S. H. Ewing & Sons, Montreal, Que.

*JEWELRY, enamelled souvenir

Caron Bros., Montreal, Que.

*JEWELRY, gold-filled

Caron Bros., Montreal, Que.

*JOIST HANGERS

*Richards-Wilcox Canadian Co., Limited, London, Ont.

*JUNCTION BOXES, cable

*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

*KELSEY WARM AIR

GENERATOR

The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

KILNS

*Sheldons, Limited, Galt, Ont.

KINDLING

Standard Fuel Co., Toronto.

*KNIFE GRINDERS

*Canada Machinery Corporation, Limited, Galt, Ont.

*W. H. Banfield & Sons, Toronto.

*KNITTED GOODS

*Penman's, Limited, Paris, Ont.

KNIVES

*Galt Knife Co., Ltd.

Henry Disston and Sons, Toronto

The Peter Hay Knife Co., Limited, Galt, Ont.

Simonds Canada Saw Co., Limited, Montreal, Que.

*KNIVES, pulp and paper

Henry Disston and Sons, Toronto.

The Peter Hay Knife Co., Limited, Galt, Ont.

*KODAKS AND PHOTOGRAPHIC

SUPPLIES

Canadian Kodak Co., Ltd., Toronto

*LABELS

Lawson & Jones, Ltd., London, Ont.

*LABELS, lithographed

Harris Lithographing Co., Toronto

*LACE LEATHER

F. O. McCordick, St. Catharines, Ont.

*Sadler & Haworth, Montreal, Que.

*The D. K. McLaren Belting Co., Limited, Montreal, Que.

*The J. C. McLaren Belting Co., Limited, Montreal, Que.

LADDERS

Stratford Mfg. Co., Ltd., Stratford, Ont.

LADDERS, step.

*Otterville Mfg. Co., Ltd., Otterville, Ont.

*LADLES, foundry

*Northern Crane Works, Limited, Walkerville, Ont.

LAGER

E. L. Drewry, Winnipeg, Man.

LAMP GLOBES

*Crouse-Hinds Co., Ltd., Toronto.

LARD

F. W. Fearman Co., Ltd., Hamilton, Ont.

LATH

The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

LATHE CHUCKS

Her & Goodwin, Brantford, Ont.

LATHE-DOGS

Canadian Billings & Spencer, Ltd., Welland, Ont.

LATHES

*Canada Machinery Corporation, Limited, Galt, Ont.

LAUNCHES

Peterboro Canoe Co., Ltd., Peterboro, Ont.

LAWN MOWERS

Taylor-Forbes Co., Limited, Guelph, Ont.

LAWN SWINGS

Stratford Mfg. Co., Ltd., Stratford, Ont.

LAVATORIES, enameled

Amherst Foundry Co., Limited, Amherst, N.S.

LAUNDRY SINKS

Amherst Foundry Co., Limited, Amherst, N.S.

LEAD GRINDERS

Benjamin Moore & Co., Limited, Toronto.

LEAD SHEET

Toronto Plate Glass Importing Co., Limited, Toronto.

LEAD PIPE

*The Steel Co. of Canada, Limited, Hamilton, Ont.

Toronto Plate Glass Importing Co., Limited, Toronto.

*The Canada Metal Co., Toronto.

*United Brass & Lead, Ltd., Toronto

LEATHER

The Robson Leather Co., Limited, Oshawa, Ont.

LEATHER, bookbinders'

Clarke & Clarke, Ltd., Toronto.

LEATHER, fancy

Clarke & Clarke, Ltd., Toronto.

LEATHER GOODS

Lamontagne, Ltd., Montreal, Que.

*LEATHER, hemlock, union and oak sole

The Breithaupt Leather Co., Ltd., Kitchener, Ont.

*LEATHER, patent colt and side leather

*A. R. Clarke & Co., Ltd., Toronto.

*LEATHER, sheep skin, etc.

Clarke & Clarke, Ltd., Toronto.

*LEATHER, upholstery

Clarke & Clarke, Ltd., Toronto.

*LEATHER, upper

A. Davis & Son, Ltd., Kingston, Ont.

*LIGHTS (marine, side and port)

*Crouse-Hinds Co., Ltd., Toronto.

*LINK BELT, Ewart, and sawmill riveted

*Canadian Link-Belt Co., Toronto.

LINK BELTING

*The Dodge Mfg. Co., Ltd., Toronto.

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

LINOLEUM

Dominion Oil Cloth Co., Limited, Montreal, Que.

LITHOGRAPHED BUSINESS

STATIONERY

Business Systems, Ltd., Toronto.

*LITHOGRAPHED TIN WARE

*Macdonald Mfg. Co., Limited, Toronto.

LITHOGRAPHERS

American Bank Note Company, Ottawa, Ont.

Harris Lithographing Co., Toronto.

LOCKERS

*Canada Wire & Iron Works Co., Hamilton, Ont.

*Dennis Wire & Iron Works Co., London, Ont.

*Geo. B. Meadows, Wire, Iron and Brass Works Co., Toronto.

LOCOMOTIVE BLOCKS

Standard Clay Products, Limited, St. Johns, Que.

LOCOMOTIVES, industrial

*Montreal Locomotive Works, Ltd., Montreal, Que.

*LOCOMOTIVE & MARINE BRASS

WORKS

The James Morrison Brass Mfg. Co., Limited, Toronto

*United Brass & Lead, Ltd., Toronto

LOOSE LEAF, BINDERS AND

FORMS

Business Systems, Ltd., Toronto.

LOOSE LEAF SYSTEMS

Copeland-Chatterton Co., Limited, Brampton, Ont.

LOOSE LEAF SUPPLIES

The Fadale Press, Ltd., Edmonton.

LUBRICATORS, steam sight feed

Penberthy Injector Co., Limited, Windsor, Ont.

LUGS, for silos and water tanks

*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*Otterville Mfg. Co., Ltd., Otterville, Ont.

LUMBER

*Brown Corporation, La Tuque, Que.

The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

G. & J. Esplen, Montreal, Que.

LUMBER, asbestos

*Eureka Mineral Wool & Asbestos Co., Toronto.

*LUMBER, spruce and pine, cedar railway ties and shingles

Bathurst Lumber Co., Ltd., Bathurst, N.B.

LUMBERING BLANKETS

Slingsby Mfg. Co., Ltd., Brantford, Ont.

*LUMBER, red pine and spruce

Gillies Bros., Ltd., Brantford, Ont.

*LUMBER, spruce, fir, larch and cedar

Fernie Lumber Co., Ltd., Fernie, B.C.

LUMBER, white pine

Gillies Bros., Ltd., Brantford, Ont.

MACHINE KNIVES

*Galt Knife Co., Ltd.

*E. C. Atkins & Co., Inc., Hamilton, Ont.

MACHINE TOOLS

*Canada Machinery Corporation, Limited, Galt, Ont.

*John Bertram & Sons Co., Ltd., Dundas, Ont.

*United Brass & Lead, Ltd., Toronto

*MACHINE WORK, special

*United Brass & Lead, Ltd., Toronto

*MACHINE WORK, special and repairs

*Canadian Rumely Co., Limited, Toronto, Ont.

MACHINERY, conveying

*Canadian Link-Belt Co., Toronto.

*Canadian Mathews Gravity Carrier Co., Limited, Toronto.

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

MACHINERY, flour mill

*Canadian Fairbanks-Morse Company, Ltd., Montreal, Que.

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

MACHINERY, grinding

*Canadian Hart Wheels, Limited, Hamilton, Ont.

MACHINERY, hoisting, etc.

*Polson Iron Works, Limited, Toronto.

J. & R. Weir, Montreal, Que.

*M. Beatty & Sons, Ltd., Welland.

*Northern Crane Works, Limited, Walkerville, Ont.

MACHINERY, ice cream

J. J. McLaughlin, Ltd., Toronto.

MACHINERY, iron working

*Canada Machinery Corporation, Limited, Galt, Ont.

*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, pulp mill

*The Waterous Engine Works Co., Limited, Brantford, Ont.

*MACHINERY, punching and shearing

- MACHINERY, special**
Bawden Machine Co., Limited, Toronto.
- MACHINERY, transmission**
*Canadian Bond Hanger and Coupling Co., Ltd., Alexandria, Ont.
*Dodge Mfg. Co., Ltd., Toronto.
*Goldie & McCulloch Co., Limited, Galt, Ont.
- MACHINERY, woodworking**
*Canada Machinery Corporation, Limited, Galt, Ont.
*Yates, P. B., Machine Co., Ltd., Hamilton, Ont.
Preston Woodworking Machinery Co., Ltd., Preston.
*The Watrous Engine Works Co., Limited, Brantford, Ont.
- MACHINE WORK, special and repairs**
*Canadian Rumely Co., Ltd., Toronto, Ont.
- MACHINE WRENCHES**
*Canadian Billings & Spencer, Ltd., Welland, Ont.
- MACHINES, painting**
Spramotor Co., London, Ont.
- MAGNESITE**
Canadian Carbonate Co., Limited, Montreal, Que.
- MALT**
*Hiram Walker & Sons, Limited, Walkerville, Ont.
- MAPLE PRODUCTS**
*Maples, Limited, Toronto.
- MARTINGALE RINGS AND SLIDE LOOPS**
The Arlington Co. of Canada, Ltd., Toronto.
- MATCHERS**
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
- MATCHES**
*The E. B. Eddy Co., Ltd., Hull.
- MECHANICAL STOKERS**
*The Jones Underfeed Stoker Co., Ltd., Toronto.
- MEDICINES, patented and pharmaceutical**
Dr. Ed. Morin & Cie., Ltd., Quebec.
- METAL, babbitt**
*Canada Metal Co., Toronto.
*Tailman Brass and Metal Co., Hamilton, Ont.
Alonso W. Spooner, Limited, Port Hope, Ont.
- METAL CEILING**
*The Pedlar People Limited, Oshawa.
- METAL LATH**
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
*The Pedlar People Limited, Oshawa.
- METAL PACKING**
*Garlock Packing Company, Hamilton, Ont.
- METAL, spinning and stamping**
The Booth-Coulter Copper and Brass Co., Limited, Toronto.
- METAL SAWS**
*E. C. Atkins & Co., Inc., Hamilton, Ont.
- METAL SHINGLES**
*The Pedlar People Limited, Oshawa.
- MILK DEALERS' MACHINERY AND SUPPLIES**
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.
- MILLBOARD, asbestos**
*Eureka Mineral Wool & Asbestos Co., Toronto.
- MILLING CUTTERS**
Pratt and Whitney Company of Canada, Dundas, Ont.
- MINING MACHINERY**
*Canadian Allis-Chalmers, Limited, Toronto.
- MITTS AND GLOVES (Indian, tan, red deerskins)**
Holt, Renfrew Ltd., Quebec, Que.
A. R. Clarke & Co., Ltd., Toronto.
- MOCCASINS AND SLIPPERS (Indian tanned leathers)**
Holt, Renfrew Ltd., Quebec, Que.
- MORTISES**
*Canada Machinery Corporation, Limited, Galt, Ont.
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
- MOTOR CABS**
*Ford Co. of Canada, Ford, Ont.
- MOTORS, electric**
*Canadian General Electric Company, Ltd., Toronto.
- MOTORS, electric (alternating current)**
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*Canadian Crocker-Wheeler Co. Ltd., St. Catharines, Ont.
*T. & H. Electric Co., Hamilton.
- MOTORS, electric (direct current)**
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*T. & H. Electric Co., Hamilton.
- MOTORS, electric (repairing)**
Consolidated Electric Co., Limited, Toronto.
*T. & H. Electric Co., Hamilton.
- MOTORS, pneumatic**
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
- MOULDERS**
*Canada Machinery Corporation, Limited, Galt, Ont.
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
- NAILS**
*The Steel Co. of Canada, Limited, Hamilton, Ont.
- NAILS, copper**
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.
- NAILS, wire**
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.
The Graham Nail Works, Toronto.
- NAPHTHA**
*The Imperial Oil Co., Limited, Toronto.
- NICKEL OXIDE**
Coniagas Reduction Co., Limited, St. Catharines, Ont.
- NUTS**
*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.
*The National Acme Mfg. Co., Montreal, Que.
*The Steel Co. of Canada, Limited, Hamilton, Ont.
*United Brass & Lead, Ltd., Toronto.
- OAKUM, plumbers, Canadian Navy Factory Waste and Metal Co., Montreal, Que.**
- SCYTHES & Co., Ltd., Toronto.**
- OAT CRUSHERS AND FLAKERS**
J. Fleury's Sons, Aurora, Ont.
- OFFICE DESKS**
*Goderich Organ Co., Goderich, Ont.
- OFFICE EQUIPMENT**
*Office Specialty Co., Newmarket, Ont.
- OFFICE FURNITURE**
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
- OILS**
Brandram-Henderson, Ltd., Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.
Sherwin-Williams Co. of Canada, Limited, Montreal, Que.
- OIL FILTRATION AND CIRCULATING SYSTEMS**
S. F. Bowser & Co., Toronto.
- OIL STORAGE SYSTEMS, self-measuring**
S. F. Bowser & Co., Toronto.
- OIL COMPANIES**
*Canadian Oil Cos., Toronto.
Commercial Oil Co., Ltd., Hamilton, Ont.
*Imperial Oil Co., Toronto.
- OILS (Petroleum products)**
*British American Oil Co., Limited, Toronto.
*The Imperial Oil Co., Limited, Toronto.
- OILS, road**
*The Barrett Co., Ltd., Toronto and Montreal.
- OILCLOTHS, floor and table**
Dominion Oil Cloth Co., Limited, Montreal, Que.
- ORGANS**
*Goderich Organ Co., Goderich, Ont.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.
- ORGANS, pipe**
Casavant Freres, St. Hyacinthe, Que.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.
- ORGANS, parlor**
*Goderich Organ Co., Goderich, Ont.
- ORNAMENTAL IRON WORK**
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*The Geo. B. Meadows, Toronto Iron and Brass Goods Works Co., Limited, Toronto.
*McGregor & McIntyre, Ltd., Toronto.
- OVERALLS**
Peerless Overall Co., Rock Island, Que.
Walker Pant and Shirt Co., Walkerville and Chatham, Ont.
The Standard Shirt Co., Limited, Montreal, Que.
- OVERCOATINGS**
Rosamond Woollen Co., Almonte, Ont.
- OVERHEAD RUNWAYS**
*Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.
*Richards-Wilcox Canadian Co., Limited, London, Ont.
- OXY-ACETYLENE WELDING**
*L'Air Liquide Society, Montreal.
*The Prest-O-Lite Co., Inc., Toronto.
- OXYGEN**
*L'Air Liquide Society, Montreal.
- PACKERS, parchment papers, discs, shavings**
*Beveridge Paper Co., Limited, Montreal.
- PACKING BOXES**
Barchard & Co., Limited, Toronto.
- PACKING, engine**
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Garlock Packing Co., Hamilton.
- PACKING, rubber**
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Limited, Jenkins Bros., Ltd., Montreal, Que.
- PAIS AND TUBS, wooden**
The C. Beck Mfg. Co., Limited, Penetanguishene, Ont.
- PAINTERS' SUPPLIES**
A. Muirhead Co., Ltd., Toronto.
- PAINTS**
R. C. Jamieson & Co., Limited, Montreal, Que.
- PAINTS AND VARNISHES**
A. Muirhead Co., Ltd., Toronto.
Benjamin Moore & Co., Limited, Toronto.
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
The Imperial Varnish & Color Co., Limited, Toronto.
The Staneland Co., Ltd., Victoria, B.C.
A. Ramsay & Sons Co., Montreal, Que.
Standard Paint Co. of Canada, Limited, Montreal, Que.
- PAINTS, barn and bridge**
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
- PAINTS, preservative**
Standard Paint Co. of Canada, Limited, Montreal, Que.
*The Barrett Co., Ltd., Toronto and Montreal.
- PANELBOARDS**
*Crouse-Hinds Co., Ltd., Toronto.
- PAPER BAGS**
*Beveridge Paper Co., Limited, Montreal.
- PAPER, book**
Barber Paper & Coating Mills, Ltd., Georgetown, Ont.
- PAPER BOXES**
King Paper Box Co., Ltd., Montreal, Que.
*Rudd Paper Box Co., Limited, Toronto.
- PAPER, coated, book and label**
*Provincial Paper Mills, Limited, Georgetown, Ont.
- PAPER, coated box board**
*Provincial Paper Mills, Limited, Georgetown, Ont.
- PAPER, coated cover**
*Provincial Paper Mills, Limited, Georgetown, Ont.
- PAPER, envelope**
Provincial Paper Mills Limited, Georgetown, Ont.
The Toronto Paper Manufacturing Co., Cornwall, Ont.
- PAPER, enamelled blotting**
*Provincial Paper Mills, Limited, Georgetown, Ont.
- PAPER, kraft and all wrappings, printings and specialties**
*Beveridge Paper Co., Limited, Montreal.
- PAPER, label**
*Provincial Paper Mills, Limited, Georgetown, Ont.
- PAPER, ledger**
*Howard Smith Paper Mills, Ltd., Montreal.
*Rolland Paper Co., Limited, Montreal, Que.
The Toronto Paper Manufacturing Co., Cornwall, Ont.
- PAPER, news**
*The Riordon Pulp and Paper Co., Montreal, Que.
- PAPER, super-book**
The Toronto Paper Manufacturing Co., Cornwall, Ont.
- PAPER, wall**
Stauntons, Ltd., Toronto.
- PAPER, Waxed**
Business Systems, Ltd., Toronto.
- PAPER, wrapping, printing and specialties**
*The Riordon Pulp and Paper Co., Montreal, Que.
- PAPER, writing**
The Toronto Paper Manufacturing Co., Cornwall, Ont.
Howard Smith Paper Mills, Limited, Montreal.
*Rolland Paper Co., Limited, Montreal, Que.
- PAPEES, bond**
*Howard Smith Paper Mills, Ltd., Montreal.
*Rolland Paper Co., Ltd., Montreal, Que.
- PAPERS, building**
Bathurst Lumber Co., Ltd., Bathurst, N.B.
*The Riordon Pulp and Paper Co., Montreal, Que.
Standard Paint Co. of Canada, Ltd., Montreal, Que.
- PARK SEATS**
Stratford Mfg. Co., Ltd., Stratford, Ont.
- PARLOR SUNDRIES**
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.
- PATENTS**
Fetherstonhaugh & Co., Toronto.
Ridout and Maybee, Toronto.
- PATENT LITIGATION**
Ridout and Maybee, Toronto.
- PAY ROLL AUDITS**
*International Business Machines, Limited, Toronto.
- PERFORATED METALS**
*Canada Wire & Iron Goods Co., Hamilton, Ont.
- PERFORATED MUSIC ROLLS**
The Otto Higel Co., Ltd., Toronto.
- PERFUMES AND TOILET PREPARATIONS**
Sovereign Perfumes Ltd., Toronto.
- PETROLEUM PRODUCTS**
*The Imperial Oil Co., Limited, Toronto.
- PHOTOMAILERS**
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.
- PIANOS**
Dominion Organ & Piano Co., Ltd., Bowmanville, Ont.
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.
- PIANO ACTIONS**
The Otto Higel Co., Ltd., Toronto.
- PIANO KEYS**
The Otto Higel Co., Ltd., Toronto.
- PIANOS, player**
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.
- PIANO STOOLS AND BENCHES**
*Goderich Organ Co., Goderich, Ont.
- PIG IRON**
*The Steel Co. of Canada, Limited, Hamilton, Ont.
- PINE DOORS, SASH, MOULDINGS, ETC.**
Wilson Bros., Limited, Collingwood, Ont.
- PINS, society, emblems and badges**
Caron Bros., Montreal, Que.

PIPE, cast iron, for water and gas
National Iron Works, Ltd., Toronto.

PIPE COUPLINGS
*The Steel Co. of Canada, Limited,
Hamilton, Ont.

PIPE COVERINGS
*Eureka Mineral Wood & Asbestos
Co., Toronto.

PIPE ORGANS
Karn-Morris Piano and Organ Co.,
Limited, Woodstock, Ont.

PIPES, culvert
Standard Clay Products, Ltd., St.
Johns, Que.

*The Pedlar People Limited,
Oshawa.

PIPE AND NIPPLES black and
galvanized
*Canadian Tube & Iron Co., Ltd.,
Montreal, Que.

PIPE, sewer
Hamilton and Toronto Sewer Pipe
Co. Limited, Hamilton, Ont.

Standard Clay Products, Ltd., St.
Johns, Que.

PIPE, soil and fittings
Anthes Foundry, Ltd., Toronto and
Winnipeg.

Warden King Ltd., Montreal, Que.

PIPE AND TUBES, wrought
*Page-Hersey Iron Tube and Lead
Co., Ltd., Toronto.

PIPE, threading and cutting off
machines
John H. Hall & Sons, Limited,
Brantford, Ont.

PISTON RODS
*The Canadian Drawn Steel Co.,
Limited, Hamilton, Ont.

*Union Drawn Steel Co., Limited,
Hamilton, Ont.

PLANERS
*Canada Machinery Corporation,
Limited, Galt, Ont.

*P. B. Yates Machine Co., Ltd.,
Hamilton, Ont.

PLANING MILLS
G. & J. Esplen, Montreal, Que.

PLASTERING TROWELS
*E. C. Atkins & Co., Inc., Hamil-
ton, Ont.

PLOWS
J. Fleury's Sons, Aurora, Ont.

PLUGS
*Crouse-Hinds Co., Ltd., Toronto.

PLUMBERS' SUPPLIES
The Garth Co., Montreal, Que.

The James Morrison Brass Mfg
Co., Ltd., Toronto.

*United Brass & Lead, Ltd., Toronto

PLUMBING APPLIANCES
Standard Sanitary Mfg. Co., Ltd.,
Limited, Toronto.

PLUMBING SUPPLIES
Toronto Plate Glass Importing Co.,
Limited, Toronto.

PNEUMATIC DRILLS
*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

PNEUMATIC MACHINERY
*Canadian Ingersoll-Rand Co., Sher-
brooke, P.Q.

POLE LINE MATERIAL (wooden
insulator top pins, side blocks,
pole steps, cross arms)
The Lachute Shuttle Co., Limited,
Lachute Mills, P.Q.

POLES, flag
*Ontario Wind Engine & Pump Co.,
Ltd., Toronto.

POLES, telegraph and telephone,
cedar
Ferne Lumber Co., Ltd., Fernie,
B.C.

**PORK PACKERS AND CHEESE
EXPORTERS**
The Ingersoll Packing Co., Limited,
Ingersoll, Ont.

POSTS, split cedar fence
Ferne Lumber Co., Ltd., Fernie,
B.C.

**POULTRY SUPPLIES AND
MEDICINES**
Lee Mfg. Co., Ltd., Pembroke, Ont.

POWDER, blasting
Canadian Explosives, Ltd., Mont-
real, Que.

POWER PRESSES
Hydraulic Machinery Co., Limited,
Montreal.

*William R. Perrin, Ltd., Toronto.

PRESERVATIVE PAINT
*Trussed Concrete Steel Co. of
Canada, Limited, Walkerville, Ont.

**PRESERVATIVE PAINT FOR
BOILERS**
*Beveridge Paper Co., Limited,
Montreal.

PRESSES, baling and filter
*William R. Perrin, Ltd., Toronto.

PRESSES, hydraulic
Hydraulic Machinery Co., Limited,
Montreal.

PRESSES, sheet metal stamping
Brown, Boggs Co., Ltd., Hamilton,
Ont.

*Canada Machinery Corporation,
Limited, Galt, Ont.

PRESSES, veneer
*Canada Machinery Corporation,
Limited, Galt, Ont.

Hydraulic Machinery Co., Limited,
Montreal.

*William R. Perrin, Ltd., Toronto.

PRINTERS
Rous & Mann, Ltd., Toronto.

PRINTING AND LITHOGRAPHING
Lawson & Jones, Limited, London
Ont.

PULLEYS
*Canadian Bond Hanger & Coup-
ling Co., Alexandria, Ont.

*Canadian Fairbanks-Morse Com-
pany, Ltd., Montreal, Que.

*Dodge Mfg. Co., Ltd., Toronto.

*The Goldie & McCulloch Co., Ltd.,
Galt, Ont.

PULLEYS, wood split.
*Bernard Industrial Co., Fortier-
ville, P.Q.

PULP, bleached sulphite
The Edward Partington Pulp and
Paper Co., St. John, N.B.

PULP, sulphate and sulphite
Bathurst Lumber Co., Ltd., Bath-
urst, N.B.

PULP
*Brown Corporation, La Tuque,
Que.

PUMPS
*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

*Canadian Allis-Chalmers, Limited
Toronto.

*Bawden Machine Co., Ltd., Toronto.

*Canadian Fairbanks-Morse Com-
pany, Limited, Montreal, Que.

*Darling Bros., Ltd., Montreal.

*Ontario Wind Engine & Pump Co.,
Ltd., Toronto.

*Smart-Turner Machine Co., Ltd.,
Hamilton, Ont.

Spramotor Co., London, Ont.

PUMPS, boiler feed
*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

*Bawden Machine Co., Ltd., Toronto.

*Smart-Turner Machine Co., Ltd.,
Hamilton, Ont.

*The Goldie & McCulloch Co., Ltd.,
Galt, Ont.

PUMPS, centrifugal
*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

*M. Beatty & Sons, Ltd., Welland,
Ont.

*Smart-Turner Machine Co., Ltd.,
Hamilton, Ont.

*Waterous Engine Works Co., Ltd.,
Brantford, Ont.

PUMPS, iron
*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

*Goold-Shapley-Muir Co., Limited,
Brantford, Ont.

*Smart-Turner Machine Co., Ltd.,
Hamilton, Ont.

*Waterous Engine Works Co., Ltd.,
Brantford, Ont.

PUMPS, turbine and reciprocating
*Bawden Machine Co., Ltd., Toronto.

*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

*Smart-Turner Machine Co., Ltd.,
Hamilton, Ont.

John McDougall, Caledonian Iron
Works Co., Ltd., Montreal, Que.

PUNCHES
*John Whitfield Co., Toronto.

*Pratt & Whitney Co., Dundas.

PYROMETERS
*Canadian Hoskins Co., Walker-
ville, Ont.

RADIATORS
Taylor-Forbes Co., Limited, Guelph,
Ont.

Warden King, Ltd., Montreal, Que.

RAILINGS, brass and iron
*Dennis Wire & Iron Works Co.,
London, Ont.

*United Brass & Lead, Ltd., Toronto

RAILS, light
Hamman Steel Car and Engineer-
ing Works, Hamilton.

RAILWAY SIGNAL APPLIANCES
General Railway Signal Co. of Can-
ada, Ltd., Montreal, Que.

RAILWAY SUPPLIES
*Canadian Steel Foundries, Ltd.,
Montreal, Que.

*Chicago Bridge & Iron Works,
Bridgeburg, Ont.

B. J. Coghlin Co., Ltd., Montreal,
Que.

RAILWAY TARIFF BINDERS
The Esdale Press Ltd., Edmonton.

**READY-TO-WEAR GARMENTS,
LADIES'**
H. C. Boulter Co., Ltd., Toronto.

REAMERS
*Pratt & Whitney Co., Dundas.

*Butterfield & Co., Rock Island, P.Q.

RECEPTACLES
*Crouse-Hinds Co., Ltd., Toronto.

SEED AND RATTAN GOODS
Canada Furniture Mfgs., Limited,
Woodstock, Ont.

REFRIGERATORS
Sanderson-Harold Co., Ltd., Paris,
Ont.

Lee Mfg. Co., Ltd., Pembroke, Ont.

REFRIGERATING MACHINERY
The Linde Canadian Refrigeration
Co., Ltd., Montreal, Que.

REFRIGERATORS, store, homes
and institutions
Ham & Nott Co., Ltd., Brantford,
Ont.

John Hillock & Co., Ltd., Toronto.

REINFORCEMENT BARS
*Burlington Steel Co., Ltd., Hamil-
ton, Ont.

*The Steel Co. of Canada, Limited,
Hamilton, Ont.

*Trussed Concrete Steel Co., Ltd.,
Walkerville.

REINFORCEMENT FOR CONCRETE
*Canada Wire & Iron Goods Co.,
Hamilton, Ont.

*Trussed Concrete Steel Co. of
Canada, Limited, Walkerville, Ont.

**REINFORCEMENT FOR CONCRETE
ROOFING**, Metal.
*The Pedlar People Limited,
Oshawa.

*Trussed Concrete Steel Co., Ltd.,
Walkerville.

REVOLVING DOORS
*A. B. Ormsby Co., Ltd., Toronto.

RINGS, gold
Caron Bros., Montreal, Que.

RIVETERS, pneumatic
*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

RIVETS
*Canadian Tube & Iron Co., Ltd.,
Hamilton, Ont.

*The Steel Co. of Canada, Limited,
Hamilton, Ont.

*Stowell Screw Co., Ltd., Mont-
real.

RIVETS, bifurcated and tubular
Parmenter & Bulloch Co., Limited,
Gananoque, Ont.

RIVETS AND BURRS, iron, copper
and brass
Parmenter & Bulloch Co., Limited,
Gananoque, Ont.

ROCK DRILLS
*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

ROLL PRINTING
*Autographic Register Co., Ltd.,
Montreal.

Business Systems, Ltd., Toronto.

ROOFING, ready to lay
Standard Paint Co. of Canada, Ltd.,
Montreal, Que.

*The Barrett Co., Ltd., Toronto and
Montreal.

ROOFINGS, plastic and liquid
*Beveridge Paper Co., Limited,
Montreal.

ROOF TRUSSES
*The Canadian Bridge Co., Ltd.,
Walkerville, Ont.

*Dominion Bridge Co., Ltd., Mon-
treal, Que.

ROPE
*Doon Twines Ltd., Doon, Ont.

*Shurly & Derrett, Ltd., Toronto.

ROPE, cotton
Hamilton Cotton Co., Hamilton,
Ont.

RUBBER FOOTWEAR
Ames Holden, McCready, Limited,
Montreal, Que.

*Gutta Percha & Rubber, Ltd.
The Miner Rubber Co., Limited,
Granby, Que.

RUBBER GOODS
*Canadian Consolidated Rubber Co.,
Limited, Montreal, Que.

*Dunlop Tire & Rubber Goods Co.,
Ltd., Toronto.

*Gutta Percha & Rubber, Ltd.

RUBBER MOULDS
Bawden Machine Co., Ltd., Toronto.

RUBBER PACKING
*Dunlop Tire & Rubber Goods Co.,
Ltd., Toronto.

*Garlock Packing Company, Ham-
ilton, Ont.

RULES
The Lufkin Rule Co. of Canada,
Ltd., Windsor, Ont.

RYE
The St. Hyacinthe Distillery Co.,
Ltd., St. Hyacinthe, Que.

SADDLERY HARDWARE
*Dominion Forge and Stamping
Co., Walkerville, Ont.

SAFES
*Goldie & McCulloch Co., Limited,
Galt, Ont.

J. & J. Taylor, Ltd., Toronto.

SAMPLE CASES
The M. Langmuir Mfg. Co. of To-
ronto, Ltd., Toronto.

J. Eveleigh & Co., Ltd., Montreal.

SAND RAMMERS
*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

*P. B. Yates Machine Co., Ltd.,
Hamilton, Ont.

SANDPAPER
*Delany and Pettit, Ltd., Toronto.

SASH CORD, cotton
Hamilton Cotton Co., Hamilton,
Ont.

SALT
Canadian Salt Co., Ltd., Windsor,
Ont.

SANITARY PAPER TOWELS
*E. B. Eddy Co., Ltd., Hull, Que.

SAW SHARPENING MACHINERY
*Canadian Hart Wheels, Limited,
Hamilton, Ont.

SAWS
*E. C. Atkins & Co., Ltd., Hamilton.

Henry Disston & Sons, Limited,
Toronto.

Shurly & Deitrich, Galt, Ont.

SAWS, cross-cut and band
*Canada Machinery Corporation,
Limited, Galt, Ont.

*P. B. Yates Machine Co., Ltd.,
Hamilton, Ont.

Shurly & Deitrich, Galt, Ont.

SAWS, circular mill
Shurly & Deitrich, Galt, Ont.

SAWS, hack
*Victor Saw Works, Ltd., Hamil-
ton, Ont.

SAWS, of all kinds
Simonds Canada Saw Co., Limited,
Montreal, Que.

SAWS, rip
*Canada Machinery Corporation,
Limited, Galt, Ont.

*P. B. Yates Machine Co., Ltd.,
Hamilton, Ont.

Shurly & Deitrich, Galt, Ont.

SAWMILLS
G. & J. Esplen, Montreal, Que.

*The Waterous Engine Works Co.,
Ltd., Brantford, Ont.

SAW MILL MACHINERY
*Canadian Allis-Chalmers, Limited,
Toronto.

SAWS, specialties
*Victor Saw Works, Ltd., Hamil-
ton, Ont.

SCALES
*Canadian Fairbanks-Morse Com-
pany, Ltd., Montreal, Que.

The Gurney Scale Co., Hamilton,
Ont.

SCALES, counter
The Gurney Scale Co., Hamilton,
Ont.

SCALES, railway track, etc.
The Gurney Scale Co., Hamilton,
Ont.

SCREENS
*Canada Wire & Iron Goods Co.,
Hamilton, Ont.

SCREEN DOORS AND WINDOWS
Sanderson-Harold Co., Ltd., Paris,
Ont.

Ham & Nott Co., Ltd., Brantford,
Ont.

SCREWS
*John Morrow Screw & Nut Co.,
Ltd., Ingersoll, Ont.

*The National Acme Mfg. Co.,
Montreal, Que.

*The Steel Co. of Canada, Limited,
Hamilton, Ont.

*Stowell Screw Co., Ltd., Mont-
real.

*United Brass & Lead, Ltd., Toronto

SCREW PLATES
*Butterfield & Co., Rock Island,
P.Q.

SECURITIES, engraved
American Bank Note Co., Ottawa,
Ont.

SERGES

Rossmond Woollen Co., Almonte,
SHAFTING

Canada Forge Co., Ltd., Welland,
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.

*Canadian Drawn Steel Co., Ltd., Hamilton, Ont.

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

*Union Drawn Steel Co., Limited, Hamilton, Ont.

*Dodge Mfg. Co., Ltd., Toronto.

SHANTY BLANKETS
Slingsby Mfg. Co., Ltd., Brantford,

SHAPERS

*Canada Machinery Corporation, Limited, Galt, Ont.

*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

SHEAR BLADES, iron

*Galt Knife Co., Ltd.

The Peter Hay Knife Co., Limited, Galt, Ont.

SHEATHING

*The Barrett Co., Ltd., Toronto and Montreal.

SHEATHING, asbestos corrugated

*Eureka Mineral Wool & Asbestos Co., Toronto.

SHEET METAL STAMPINGS

Acme Stamping & Tool Works, Ltd., Hamilton, Ont.

*The Pedlar People Limited, Oshawa.

*W. H. Banfield & Sons, Ltd., Toronto.

SHEETS, ETC.

*Lauhan Brass & Metal Co., Hamilton, Ont.

SHEETS, galvanized

*Dominion Sheet Metal Co., Ltd., Hamilton.

*The Pedlar People Limited, Oshawa.

SHINGLES

Bathurst Lumber Co., Ltd., Bathurst, N.B.

SHINGLE SAWS

*E. C. Atkins & Co., Inc., Hamilton, Ont.

SHIRTS

John W. Peck & Co., Ltd., Montreal, Que.

SHIRTS, workmen's

*A. R. Clarke & Co., Ltd., Toronto.

SHOE PEGWOOD

O. Chalifour, Quebec, Que.

SHOE LININGS

Galt Knitting Co., Ltd., Galt, Ont.

SHOES, running and athletic

Ames-Holden-McCreedy, Ltd., Montreal, Que.

SHOOKS

Barchard & Co., Ltd., Montreal.

SIGNAL CELLS

Canadian National Carbon Co., Ltd., Toronto.

SILENT CHAIN DRIVES

*Canadian Link-Belt Co., Toronto.

SILVER BULLION

Coniagas Reduction Co., Ltd., St. Catharines, Ont.

SILVERSMITH

Canadian Wm. A. Rogers, Ltd., Toronto.

Standard Silver Co., Toronto.

SILVERWARE, sterling

Roden Bros., Limited, Toronto.

SINKS, enamelled

Amherst Foundry Co., Limited, Amherst, N.S.

SKATES, figure

Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, genuine Acme

Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, hockey

Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, ice

Canada Cycle and Motor Co., Ltd., Toronto.

SKATE SHARPENERS

*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.

SKIFFS

Peterboro Canoe Co., Ltd., Peterboro, Ont.

SKYLIGHTS

*A. B. Ormsby Co., Ltd., Toronto.

*The Pedlar People Limited, Oshawa.

SLEIGHS

Tudhope-Anderson Co., Limited, Orillia, Ont.

SLIPPERS

Ames-Holden-McCreedy, Ltd., Montreal, Que.

SLOTTERS

*Canada Machinery Corporation, Limited, Galt, Ont.

SMELETER LINING

*Beveridge Paper Co., Ltd., Montreal.

SMOKE CONSUMERS

*The Jones Underfeed Stoker Co., Ltd., Toronto.

SMOKE-STACKS

*Steel Trough and Machine Co., Ltd., Tweed, Ont.

SOAPS

J. Barsalou & Co., Ltd., Montreal, Que.

SOAP (soft, oil)

The Imperial Varnish & Color Co., Ltd., Toronto.

Sherwin-Williams Co. of Canada Limited, Montreal, Que.

SOCKETS

*Crouse-Hinds Co., Ltd., Toronto.

SODA WATER FOUNTAINS

J. J. McLaughlin, Ltd., Toronto.

SOIL PIPE

Anthes Foundry, Ltd., Toronto.

SOLDER

Alonso W. Spooner, Ltd., Port Hope, Ont.

*Canada Metal Co., Toronto.

*Tallman Brass & Metal Co., Hamilton, Ont.

SOLDER, silver

Geo. H. Lees & Co., Hamilton.

SOLDER, wire and bar

*American Can Co., Montreal, and Hamilton.

SOLDERING IRONS AND COPPERS

Brown, Boggs Co., Ltd., Hamilton, Ont.

SNOWSHOES

Holt Renfrew, Ltd., Quebec, Que.

SPECIAL MACHINERY

Globe Engineering Co., Ltd., Hamilton.

SPIKES, railway and marine

Starr Mfg. Co., Ltd., Dartmouth, N.S.

SPIRAL CONVEYORS

*Canadian Mathews Gravity Carrier Co., Ltd., Toronto.

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

SPLIT PEAS

H. Murtion, Ltd., Guelph, Ont.

SPIRITS

*Hiram Walker & Sons, Limited, Walkerville, Ont.

SPORTING MEDALS AND TROPHIES

Roden Bros., Limited, Toronto.

SPRAYERS

Spramotor Co., London, Ont.

SPRING COTTERS

*Richards-Wilcox Canadian Co., Limited, London, Ont.

SPRINGS

*Canadian Steel Foundries, Ltd., Montreal, Que.

B. J. Coghlin Co., Ltd., Montreal, Que.

Guelph Spring & Axle Co., Ltd., Guelph, Ont.

SPRINGS, carriage and automobile

Guelph Spring & Axle Co., Ltd., Guelph, Ont.

SPRINKLER SYSTEMS

*Chicago Bridge & Iron Works, Bridgeburg, Ont.

*The Bennett & Wright Co., Ltd., Toronto, Ont.

*Purdy, Manell, Ltd., Toronto.

*Vogel Co. of Canada, Ltd., Montreal, Que.

SPROCKET WHEELS

*Canadian Link Belt Co., Ltd., Toronto.

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R. C. Jamieson & Co., Ltd., Montreal, Que.

STAINS, creosote shingle

A. Muirhead Co., Ltd., Toronto.

STAMPINGS

*Dominion Forge and Stamping Co., Ltd., Walkerville, Ont.

STAMPS, steel, brass and rubber

Pritchard-Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

STAMP MILLS

*Jenckes Machine Co., Sherbrooke.

STATIONERY, office

Harris Lithographing Co., Toronto.

STEAM PIPE and BOILER COVERINGS, asbestos

*Eureka Mineral Wool & Asbestos Co., Toronto.

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*Nova Scotia Steel & Coal Co., Ltd. New Glasgow, N.S.

*Burlington Steel Co., Ltd., Hamilton, Ont.

STEEL BILLETS AND BLOOMS

*The Steel Company of Canada, Limited, Hamilton.

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*Dominion Bridge Co., Ltd., Montreal.

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*Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.

*The Pedlar People Limited, Oshawa.

*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

STEEL CABINETS

J. & J. Taylor, Ltd., Toronto.

STEEL CASTINGS

*Canadian Steel Foundries, Ltd., Montreal, Que.

*Dominion Steel Foundry Co., Ltd., Hamilton.

STEEL FILING EQUIPMENT

*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

STEEL PLATE WORK

*Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.

*Toronto Iron Works, Ltd., Toronto.

STEEL RODS

*The Steel Co. of Canada, Ltd., Hamilton.

STEEL SASH

*Dennis Wire & Iron Works Co., London.

*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

STEEL SHELVING

*Dennis Wire & Iron Works Co., London.

STEEL WIRE RODS

*The Steel Company of Canada, Limited, Hamilton.

STELLITE

*Deloro Smelting & Refining Co., Ltd., Deloro and Toronto.

STENCILS, brass

Pritchard-Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

STEREOTYPING

Central Press Agency, Toronto

STOKERS

*The Jones Underfeed Stoker Co., Ltd., Toronto.

STOOLS AND BENCHES, piano and organ

*Otterville Mfg. Co., Ltd., Otterville, Ont.

STOOLS, steel factory

*Steel Trough and Machine Co., Ltd., Tweed, Ont.

STONE

The Hagersville Contracting Co., Hagersville, Ont.

STONEWARE

*Jas. W. Foley & Co., St. John, N.B.

STORAGE BATTERIES

*Canadian General Electric Company, Ltd., Toronto.

STORE FITTINGS

The Canadian Office & School Furniture Co., Ltd., Preston, Ont.

STOVES

Smith Foundry Co., Ltd., Fredericton, N.B.

Tudhope-Anderson Co., Limited, Orillia, Ont.

STOVE LININGS

Standard Clay Products, Ltd., St. John, Que.

STOVES AND RANGES

Lee Mfg. Co., Ltd., Pembroke, Ont.

The Jas. Smart Mfg. Co., Ltd., Brockville, Ont.

McClary Mfg. Co., London, Ont.

STREET LIGHTING FIXTURES

*Crouse-Hinds Co., Ltd., Toronto.

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*Otterville Mfg. Co., Ltd., Otterville, Ont.

STRUCTURAL STEEL

*Canadian Allis-Chalmers, Limited, Toronto.

*Dominion Bridge Co., Montreal.

*Hamilton Bridge Works Co., Ltd., Hamilton.

*Manitoba Bridge & Iron Works, Ltd., Winnipeg.

*McGregor & McIntyre, Ltd., Toronto.

*McKinnon Holmes & Co., Sherbrooke, P.Q.

*The Canadian Bridge Co., Ltd., Walkerville, Ont.

SUIT CASES

J. Eveleigh & Co., Ltd., Montreal.

The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.

SUPPLY DEALERS

*The Foundation Co., Limited, Montreal.

SURFACERS

*Canada Machinery Corporation, Limited, Galt, Ont.

*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

SWITCHBOARDS

*Canadian General Electric Company, Ltd., Toronto.

*Crouse-Hinds Co., Ltd., Toronto.

SWITCHES

*Crouse-Hinds Co., Ltd., Toronto.

SWITCHES, railway

Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.

SWITCHES AND FROGS

*Canadian Steel Foundries, Ltd., Montreal, Que.

SWITCH STANDS

Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.

TABLE COVERS, chenille

Hamilton Cotton Co., Hamilton, Ont.

TANKS

*Toronto Iron Works, Ltd., Toronto.

*Chicago Bridge & Iron Works, Bridgeburg, Ont.

Gould-Shapley-Muir Co., Ltd., Brantford, Ont.

*McKinnon Holmes & Co., Sherbrooke, P.Q.

*Ontario Wind Engine & Pump Co., Ltd., Toronto.

*The Goldie & McCulloch Co., Ltd., Galt.

*The Watrous Engine Works Co., Ltd., Brantford.

TANKS, steel

- TOOLS, track**
B. J. Coghlin Co., Ltd., Hamilton, Ont.
- TOOLS, sheet metal workers'**
Brown, Boggs Co., Ltd., Hamilton.
- TEACK, steel, portable**
Hammant Steel Car and Engineering Works, Hamilton.
- TRACTORS, kerosene and gasoline**
*Gilson Manufacturing Co., Ltd., Guelph.
- TRADE MARKS AND DESIGNS**
Ridout & Maybee, Toronto.
- TRANSFORMERS**
*Canadian General Electric Company, Ltd., Toronto.
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines.
- TRANSLATIONS INTO FRENCH**
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- TRANSMISSION MACHINERY**
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Canadian Link Belt Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
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*The Watrous Engine Works Co., Ltd., Brantford.
- TRAPS**
*C. A. Dunham Co., Ltd., Toronto.
*Canadian Morehead Mfg. Co., Woodstock.
- TROLLEYS**
*Richard-Wilcox Canadian Co., Limited, London, Ont.
*Northern Crane Works, Limited, Walkerville.
- TRUCKS**
*Canadian Fairbanks-Morse Company, Ltd., Montreal, Que.
The Gurney Scale Co., Hamilton.
*Northern Crane Works, Limited, Walkerville.
- TRUCKS, brick, tile and lumber**
*Watrous Engine Works Co., Ltd., Brantford.
- TRUCKS, fibre and reinforced**
*Beveridge Paper Co., Limited, Montreal.
- TRUCKS, motor**
*National Steel Car Co., Limited, Hamilton.
- TRUCKS, warehouse and factory**
The W. S. Mahaffy Co., Toronto.
- TRUCKS, steel, forge and foundry**
Hammant Steel Car and Engineering Works, Hamilton.
- TRUCKS FOR OFFICE AND VAULT USE**
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
- TRUNKS**
Lamontagne Ltd., Montreal, Que.
J. Eveleigh & Co., Ltd., Montreal.
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.
- TUBING, brass and copper**
*Booth-Coulter Copper & Brass Co., Ltd., Toronto.
Canadian Seamless Wire Co., Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.
- TUBING, Fibre**
*Beveridge Paper Co., Limited, Montreal.
- TUBING, gold and silver**
Canadian Seamless Wire Co., Toronto.
- TUMBLERS, foundry**
*Northern Crane Works, Limited, Walkerville.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
- TURBINES, steam**
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines.
- TURPENTINE**
*Brown Corporation, La Tuque, Que.
- TWEEDS**
Rosamond Woollen Co., Almonte, Ont.
- TWINES**
*Doon Twines Ltd., Doon, Ont.
*Shurly & Derrett, Ltd., Toronto.
- TWINES, binder**
Brantford Cordage Co., Ltd., Brantford, Ont.
- TWINES, cotton**
Hamilton Cotton Co., Hamilton, Ont.
- TWIST DRILLS**
*John Morrow Screw and Nut Co., Ltd., Ingersoll.
*Pratt and Whitney Co., of Canada, Dundas, Ont.
*The Wilt Twist Drill Co., Ltd., Walkerville, Ont.
- UNDERWEAR**
Galt Knitting Co., Ltd., Galt, Ont.
- UNDERWEAR, imperial**
Kingston Hosiery Co., Ltd., Kingston, Ont.
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*Dart Union Co., Ltd., Toronto.
*Otterville Mfg. Co., Ltd., Otterville, Ont.
- UPHOLSTERED FURNITURE, leather and tapestries**
Imperial Rattan Co., Ltd.
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*Canadian Fairbanks-Morse Company, Ltd., Montreal, Que.
*Jenkins Bros., Ltd., Montreal.
*Kerr Engine Co., Ltd., Walkerville.
T. McAvity & Sons, Ltd., St. John, N.B.
*Penberthy Injector Co., Ltd., Windsor.
- VALVES, for steam and water**
*Jenkins Bros., Ltd., Montreal.
*Mueller Mfg. Co., Ltd., Sarnia.
*Penberthy Injector Co., Ltd., Windsor.
- VALVES, pressure reducing**
*Mueller Mfg. Co., Ltd., Sarnia.
- VALVES, regrinding globe, angle cross checks, swing checks**
*Mueller Mfg. Co., Ltd., Sarnia.
Penberthy Injector Co., Ltd., Windsor, Ont.
- VALVES, regulating**
*Mueller Mfg. Co., Ltd., Sarnia.
- VALVES, rubber**
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
- VARNISHES**
*Ant & Wiborg Co. of Canada, Ltd., Toronto.
Berry Bros., Walkerville, Ont.
R. C. Jamieson & Co., Ltd., Montreal, Que.
- VAULT FITTINGS, steel**
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
- VAULTS AND VAULT DOORS**
*The Goldie & McCulloch Co., Ltd., Galt.
J. & J. Taylor, Ltd., Toronto.
- VENTILATING APPLIANCES**
*Sheldons, Ltd., Galt.
- VENTILATING SYSTEMS**
Gurney Foundry Co., Ltd., Toronto.
- VENTILATORS**
*A. B. Ormsby, Ltd., Toronto.
*The Pedlar People Limited, Oshawa.
- VOLTMETERS AND AMMETERS**
*Crouse-Hinds Co., Ltd., Toronto.
- WAGONS**
Tudhope-Anderson Co., Ltd., Orillia.
- WALL COPING**
Standard Clay Products, Ltd., St. Johns, Que.
- WASHERS**
*The Steel Company of Canada Limited, Hamilton.
*United Brass & Lead, Ltd., Toronto.
- WASHERS, fibre**
*Beveridge Paper Co., Limited, Montreal.
- WASHERS, plate or wrought**
London Rolling Mill Co., Ltd., London, Ont.
- WASTE PAPER BASKETS AND ALL RECEPTACLES, fibre**
*Beveridge Paper Co., Limited, Montreal.
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Factory Waste and Metal Co., Montreal, Que.
*Scythes & Co., Ltd., Toronto.
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Benjamin Moore & Co., Ltd., Toronto.
- *Beveridge Paper Co., Limited, Montreal.**
- *The Barrett Co., Ltd., Toronto and Montreal.**
- *Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.**
- WATER WHEELS**
*Canadian Allis-Chalmers, Limited, Toronto.
- WEBBING, elastic**
Hamilton Cotton Co., Hamilton, Ont.
- WEBBING, non-elastic**
Hamilton Cotton Co., Hamilton, Ont.
- WELDING APPARATUS AND MATERIALS**
*The Prest-O-Lite Company.
- WELL-DIGGING TOOLS AND MACHINERY**
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
- WHEELS**
*Canadian Car & Foundry Co., Ltd., Montreal, Que.
- Wheels, corundum**
*Canadian Hart Wheels, Ltd., Hamilton, Ont.
- WHEELS, emery**
*Canadian Hart Wheels, Ltd., Hamilton, Ont.
- WHEELS, fibre**
*Beveridge Paper Co., Limited, Montreal.
- WHEELS, water (impulse type)**
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Lay Whip Co., Rock Island, Que.
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Coniagas Reduction Co., Ltd., St. Catharines, Ont.
- WHITE LEAD**
Brandram-Henderson, Ltd., Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.
- WINDMILLS**
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
- WINDOW SHADES**
Daly & Morin, Montreal, Que.
- WIRE**
*The Steel Company of Canada Limited, Hamilton.
*Laidlaw Bale Tie Co., Ltd., Hamilton, Ont.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
The Graham Nail Works, Toronto.
- WIRE BALE TIES**
*Laidlaw Bale Tie Co., Ltd., Hamilton, Ont.
- WIRE CLOTH**
*Canada Wire & Iron Goods Co., Hamilton.
C. H. Johnston & Sons, Ltd., Montreal, Que.
- WIRE, feeder and trolley**
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.
- WIRE GUARDS**
*Canada Wire & Iron Goods Co., Hamilton.
C. H. Johnston & Sons, Ltd., Montreal, Que.
- WIRE, insulated electric**
*Northern Electric Co., Limited, Montreal.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.
- WIRE, weatherproof**
*Northern Electric Co., Limited, Montreal.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.
- WIRE ROPE**
*Dominion Wire Rope Co., Ltd., Montreal.
*The B. Greening Wire Co., Ltd., Hamilton.
- WIRE WORK**
C. H. Johnson & Sons, Ltd., Montreal, Que.
*Canada Wire & Iron Goods Co., Hamilton.
*The Geo. B. Meadows, Toronto, Iron and Brass Goods Works Co., Ltd., Toronto.
- WIRING DEVICES**
*Crouse-Hinds Co., Ltd., Toronto.
- WOOD**
Standard Fuel Co., Toronto.
- WOOD BOREES**
*Canada Machinery Corporation, Limited, Galt, Ont.
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
- WOOD PRINTERS**
Barchard & Co., Ltd., Toronto.
- WOOD PULP, mechanical**
La Cie de Pulpe de Chicoutimi, Chicoutimi, Que.
- WOOD SHOP, general work**
*Canadian Rumely Co., Limited, Toronto, Ont.
- WOOD SPLIT PULLEYS**
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
- WOOL**
*H. V. Andrews, Toronto.
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Rosamond Woollen Co., Almonte, Ont.
- WRAPPERS, book, bottle, etc.**
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- WRAPPERS, waterproof paper and twine reinforced**
*Beveridge Paper Co., Limited, Montreal.
- WROUGHT IRON PIPE**
*The Steel Company of Canada, Ltd., Hamilton.
- WROUGHT PIPE**
*The Steel Company of Canada, Ltd., Hamilton.
- YARNS, cotton**
Hamilton Cotton Co., Hamilton, Ont.
- ZINC, electrical**
*The Canada Metal Co., Toronto.

* For Display Advertisement see Index, Pages 1-2

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THE FISH-MONGER'S EXPLANATION

Selling and advertising effort, when you are behind with your orders, is a preparation—a prudence—for the period when you are ahead with your orders.

The other day a fish monger went through the streets of a small New England town, blowing a horn and between blasts yelling "Scup and scrod!" "Scup and scrod!"—two well-known kinds of fish in that country.

A woman came to a door and said: "Gimme some scup."

"Haven't got any scup," said the fish monger.

"Well, then," said the woman, "what are you yelling 'scup' for if you haven't got any scup?"

"Why," replied the fish monger, "I didn't want you to forget scup when I got scup!"—
Printers' Ink.

There is a right way to advertise an oversold product—a way that will insure buyers' good-will and keep them friendly until supply equals or exceeds demand. We will help you find that way—if your product is oversold—and you have stopped advertising because of it.

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TORONTO

WINNIPEG
Codes—ABC, 5th Edition

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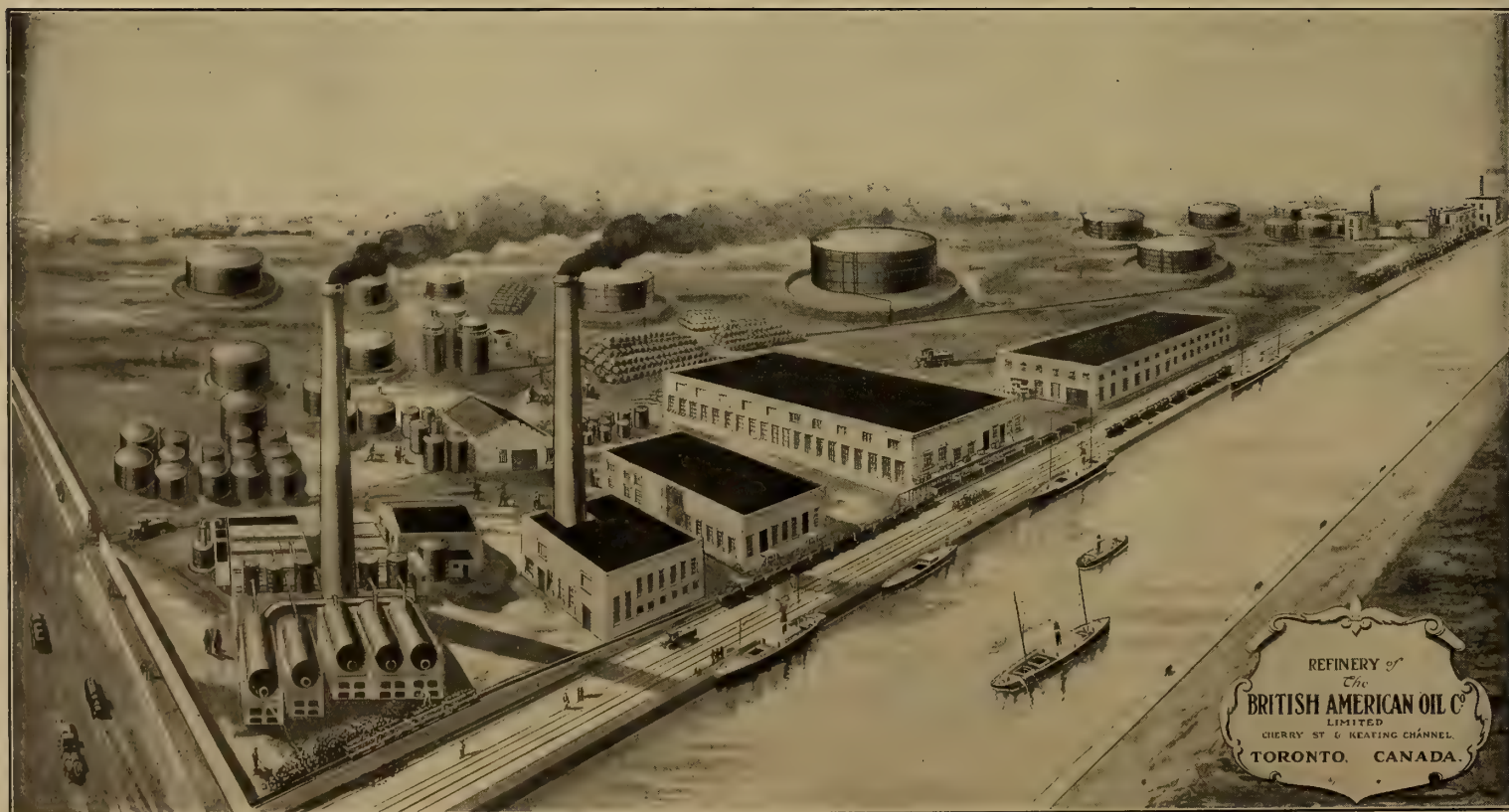
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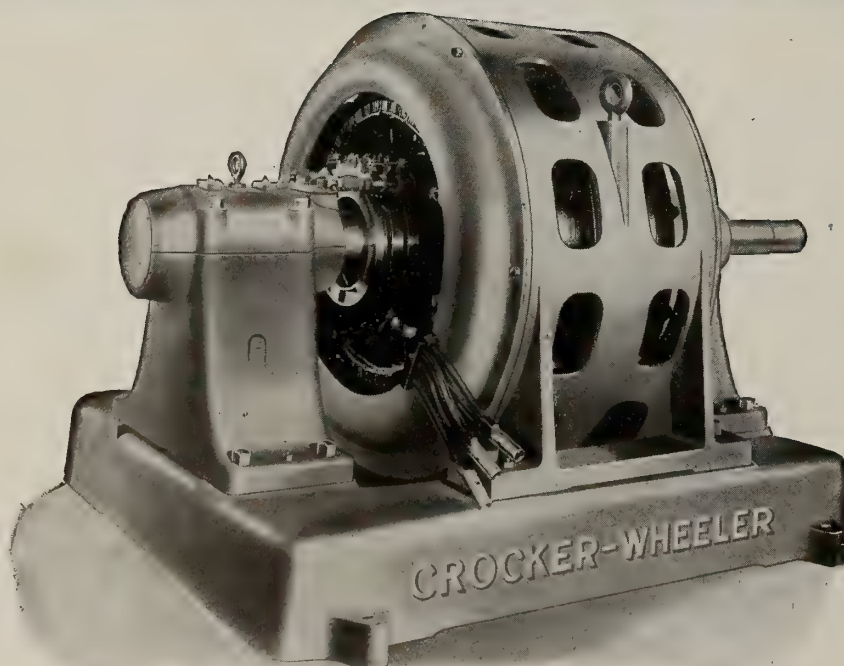
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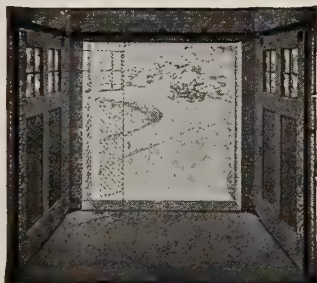


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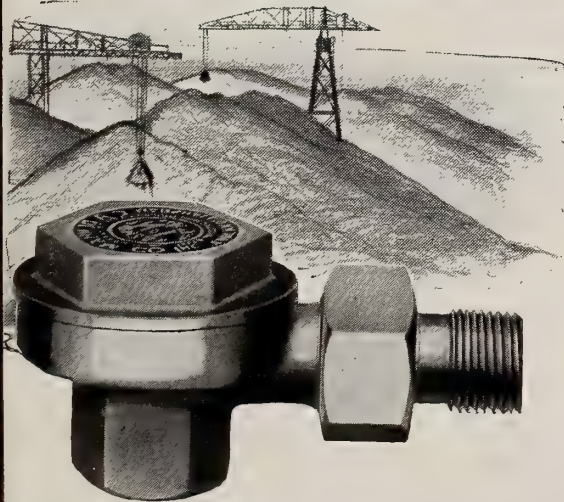


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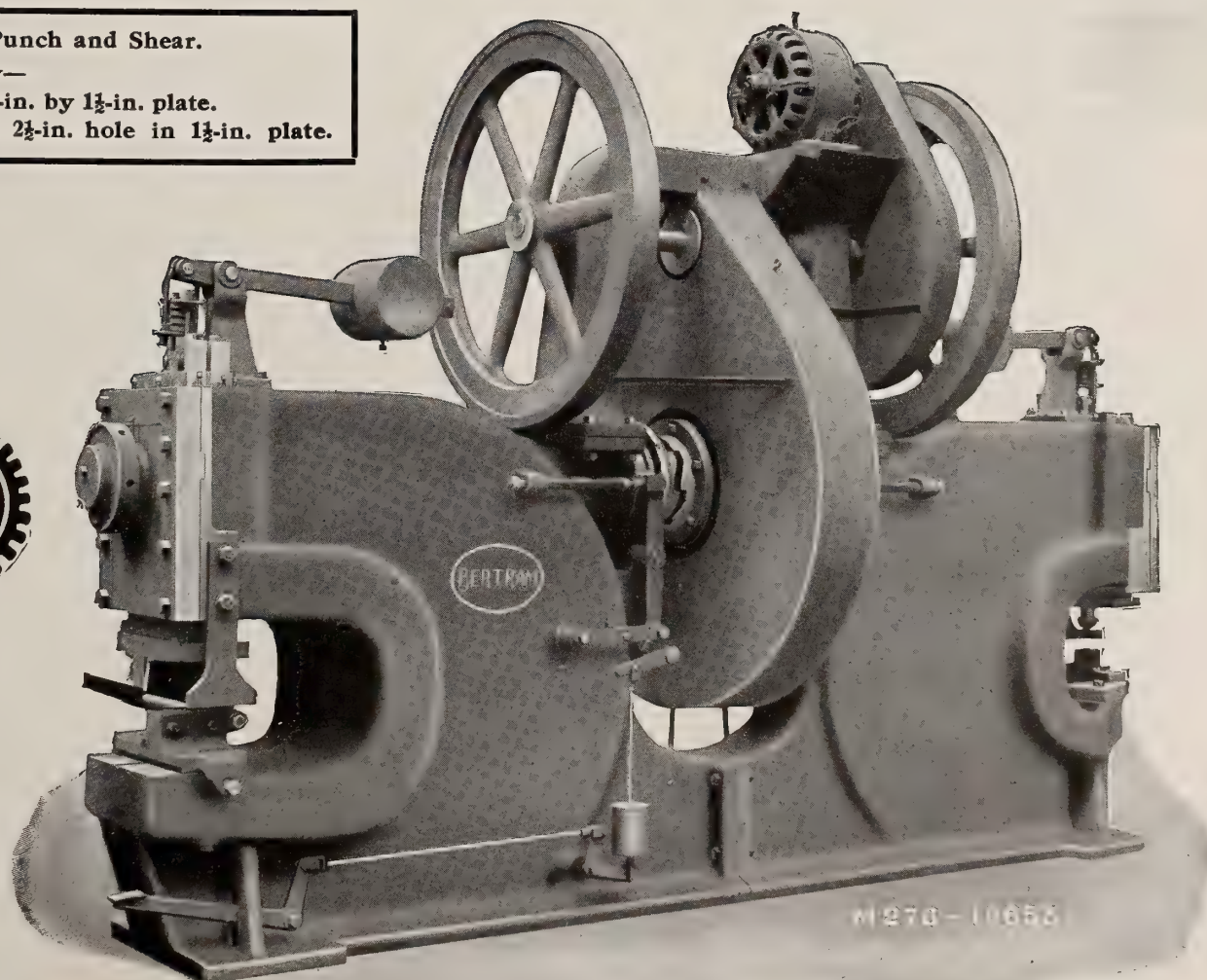
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Shears 8-in. by 1½-in. plate.

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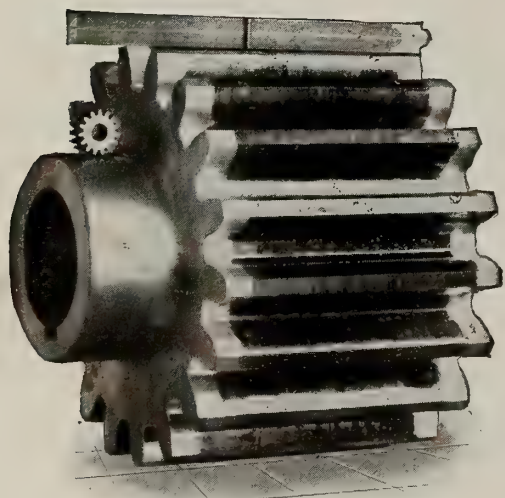


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convenience.

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"Not Steel, but its Master"

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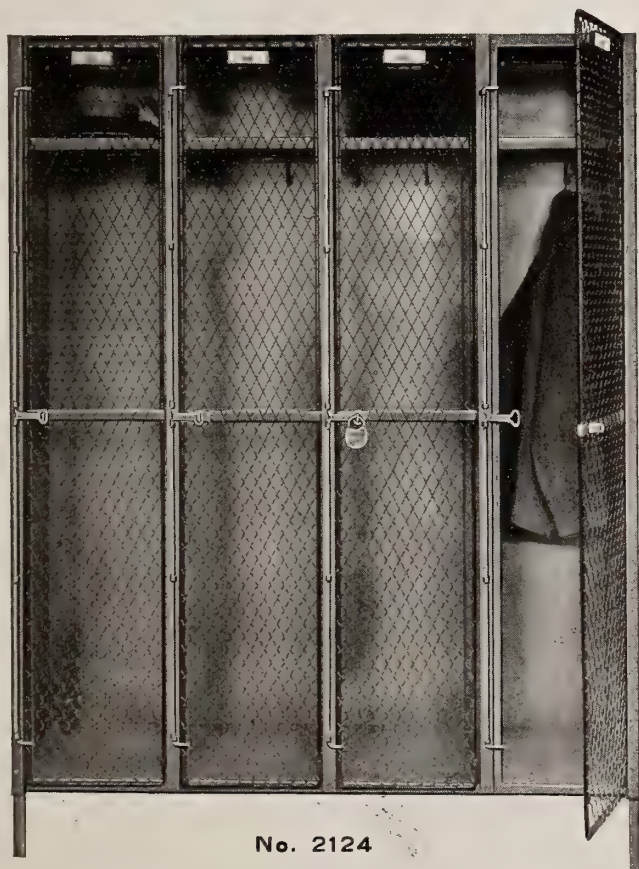
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You can prevent this kind of pilfering amongst your employees by giving to each of them a

MEADOWS METAL LOCKER



No. 2124

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Toronto Wire, Iron and Brass Works
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Oxy-Acetylene Welding and Cutting



Cutting $\frac{3}{4}$ -inch Sheet Steel Piling (including lock joints $2\frac{1}{4}$ inches thick) by the Prest-O-Lite Process

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offers splendid opportunities for substantial savings in manufacturing, construction and repair work.

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Write for valuable illustrated literature and data on work others are doing by Prest-O-Lite Welding Process. It may point out ways to solve your problems. Address Dept. C-104.

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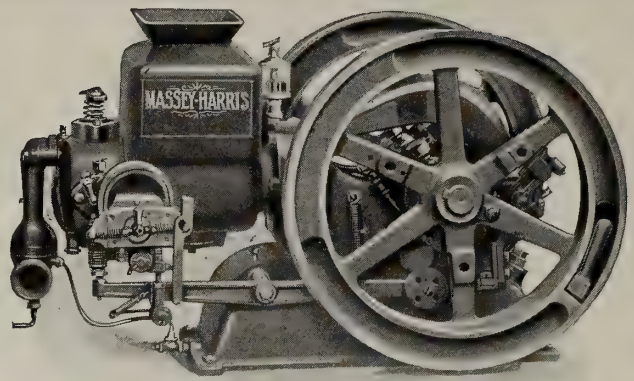
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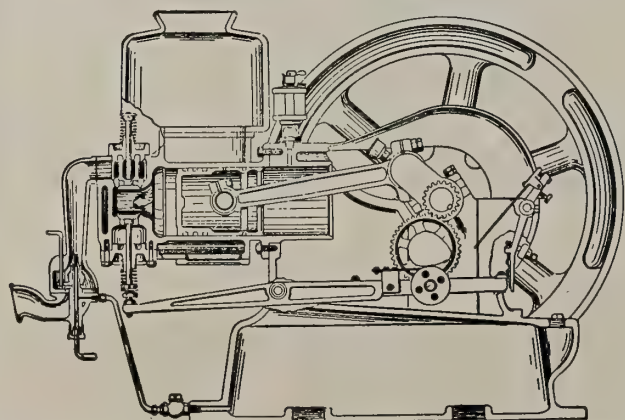
¶ Full information on request.

MASSEY-HARRIS COMPANY, LIMITED

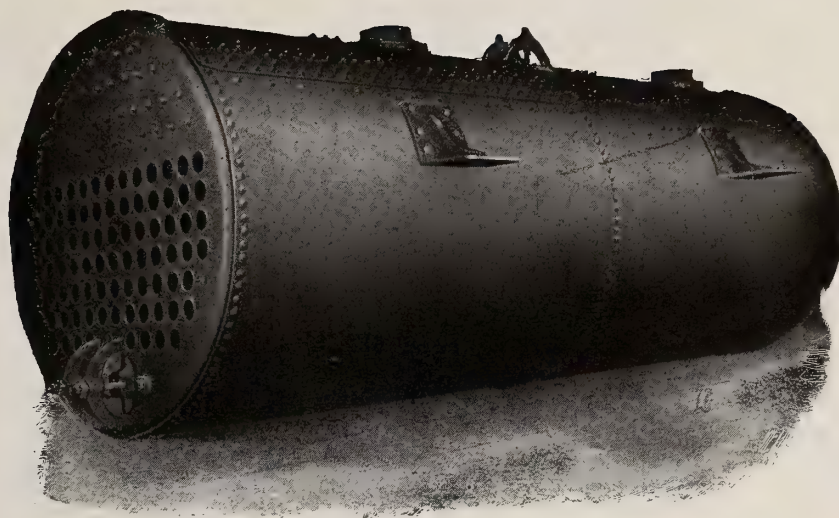
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INGLIS' PRODUCTS ARE "MADE-IN-CANADA"

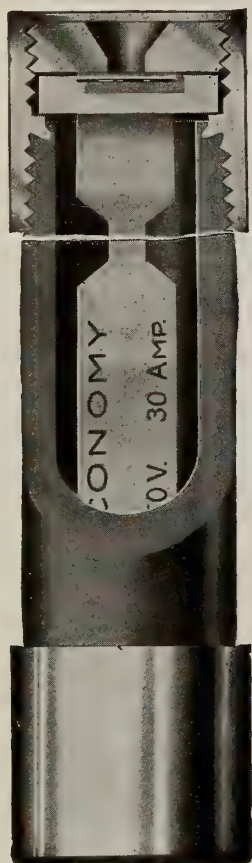
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Economy "Drop Out" Renewal Links are responsible for this saving.

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It's the work of a moment for even a novice to replace the link and renew the fuse.

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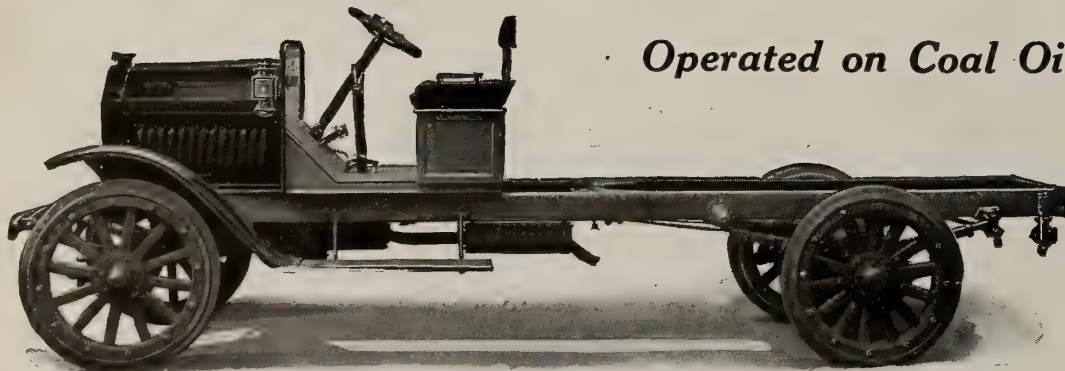
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WORM DRIVE TRUCKS

Operated on Coal Oil or Gasoline



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'Phone Main 1725

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FOR

Jenkins Bros. Type "K" Iron Body Gate Valves

AND

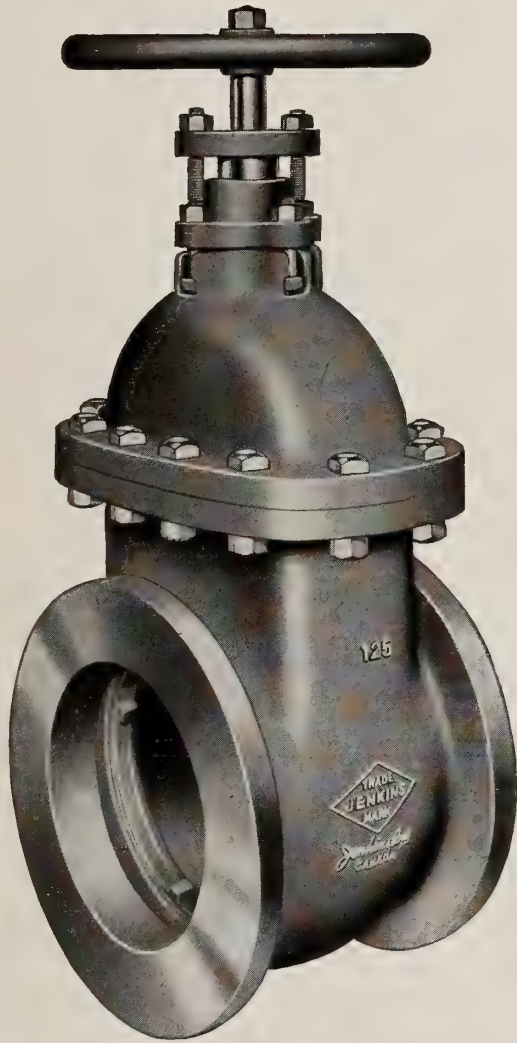


FIG. 402, TYPE "K," IRON BODY
INSIDE SCREW, GATE
VALVE, FLANGED

look for the Diamond Trade-Mark which is cast on the body of all genuine valves.

This Trade - Mark represents the highest grade of valves made; the production of one of the most modern valve plants in the World.

Made in Canada

"Type "K" Iron Body Gate Valves are registered for use in Ontario and the Western Provinces by the Depts. of Public Works.

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Limited**

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of the World

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So do plant owners and machinists everywhere in Canada.

That is why machine shops in every province of the Dominion use Knight chucks. That is why the men recommend them.

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HOISTING ENGINES

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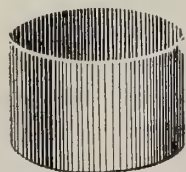
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R. Hamilton & Co., Vancouver
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34" Diameter



23" x 3 1/4"



15" x 9 1/2"



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In Sheet Metal of all
Kinds in Sizes up to

12" Deep by 12" Diameter

9 1/2" Deep by 15" Diameter

3 1/4" Deep by 23" Diameter

**Metal Spinning
Electro Plating**

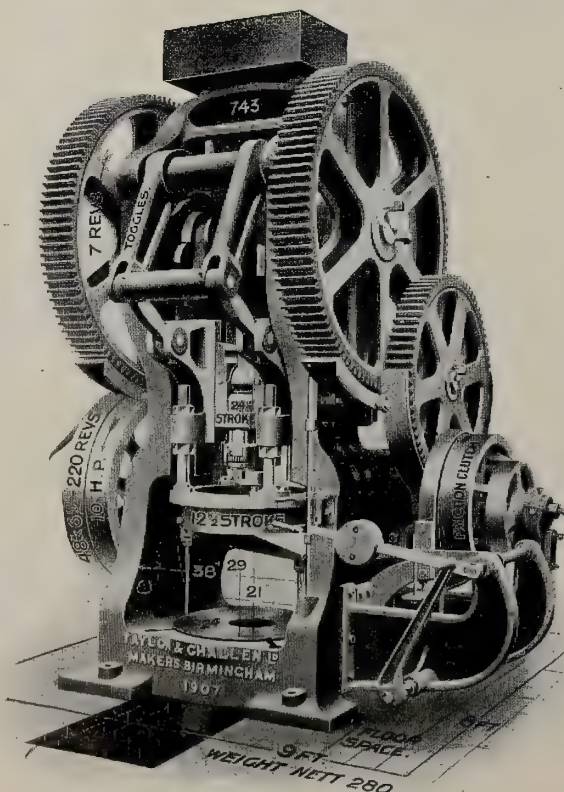
Our machine shop is fully equipped, including automatic screw machines of the latest design. We do high quality work on aeroplane bolts and screws of nickel steel.

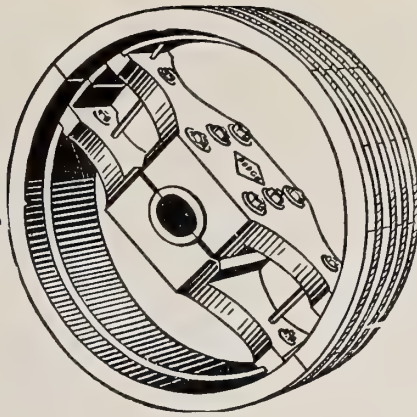
Let us advise you and estimate on your requirements.

The Wentworth Mfg. Co., Limited

OAK AVENUE

HAMILTON, ONT.





Steel, Wood and an Embargo

Business men know something of the troubles that beset the path of those who need steel; but not all of them know that the situation is not getting easier.

The United States Government, for instance, has embargoed the use of steel for pulleys except upon war orders.

But an interesting development has come out of this embargo.

Men who previously were quite honest in their convictions regarding the great efficiency of a metal pulley have discovered that a Dodge Wood-Split Pulley will not only do all that a metal pulley ever did, but it will do it better and for a less cost.

They have discovered that the surface of a Dodge Wood-Split Pulley provides greater adhesion, hence there is less belt slippage and a corresponding saving of power. They have found the Dodge Wood-Split Pulley lighter and better balanced; consequently, there is less weight friction. They have proved that the Dodge Wood-Split Pulley may be run at higher speeds than metal pulleys without danger of bursting.

And, most interesting of all, they have learned that they can get Dodge Wood-Split Pulleys when they order them. We carry large stocks at our factory and branches, and ship all sizes from 4-inch diameters up to 6-foot diameters on the day orders are received.

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Branch Warehouse : 770 St. Paul St. W., Haymarket Square, Montreal

CANADA'S LARGEST BUILDERS OF TRANSMISSION MACHINERY

Truscon System of Reinforced Concrete

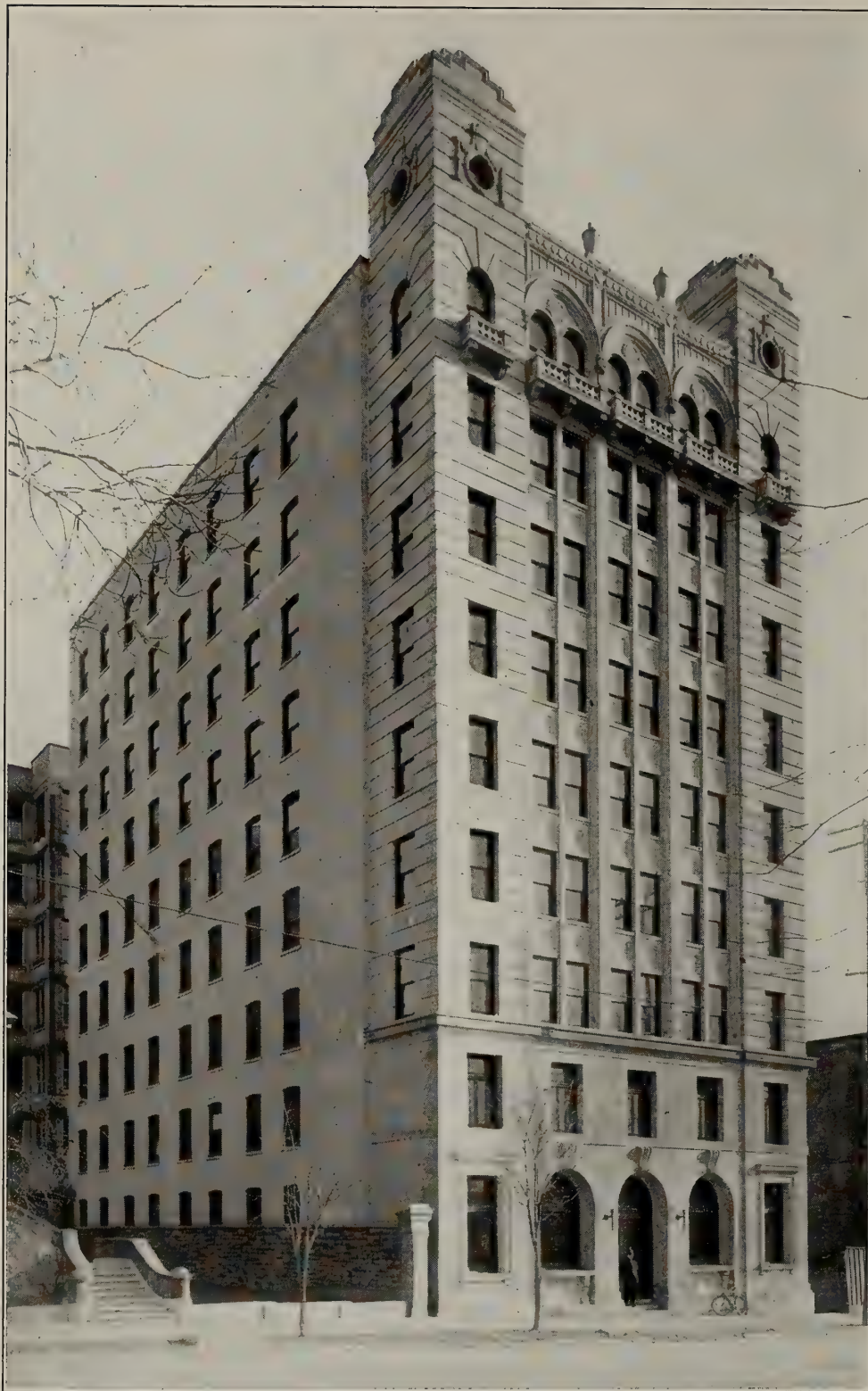
was used in this beautiful modern office building, which is located on Wellington street, between O'Connor and Bank streets, Ottawa.

The construction is fireproof throughout. The exterior is of limestone, terra cotta and brick.

The entire skeleton frame of the building is of reinforced concrete in which our Trussed and Rib Bars, together with Spiral Hooping, were used exclusively.

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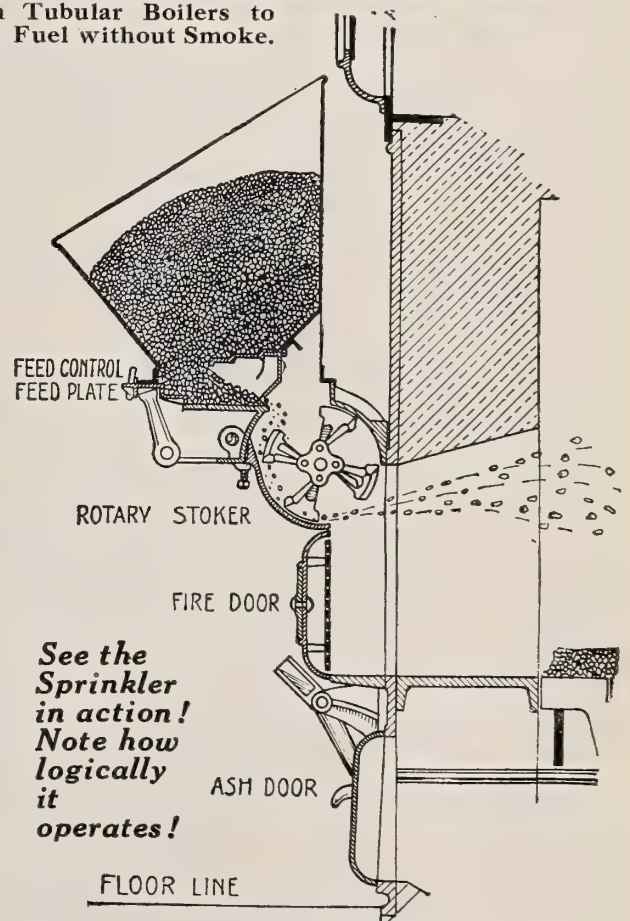
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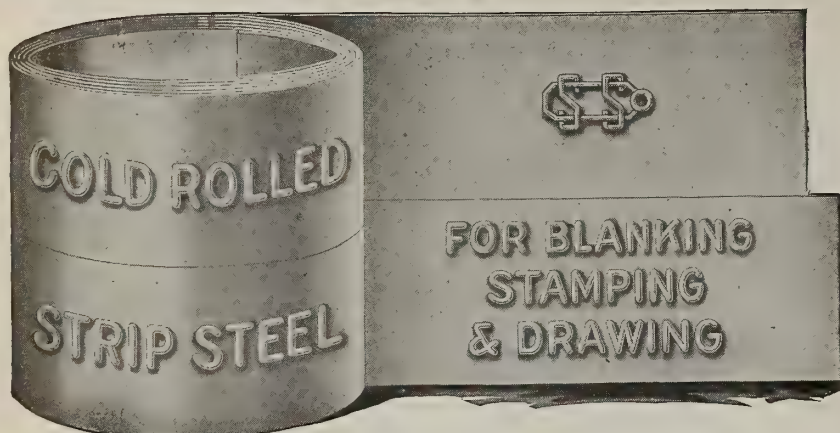
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emphasizes the need for a better method for feeding the fires of boilers, for the old-time method of shovelling coal into the fire by hand labor is never economical. The best way to feed the fire is to install the

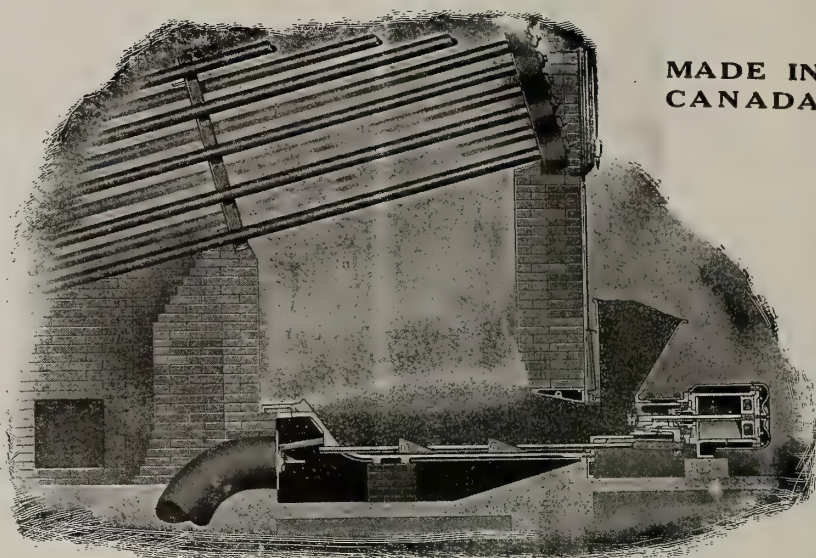
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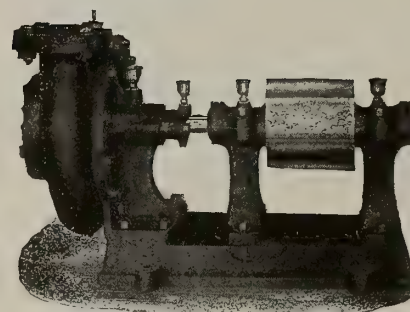


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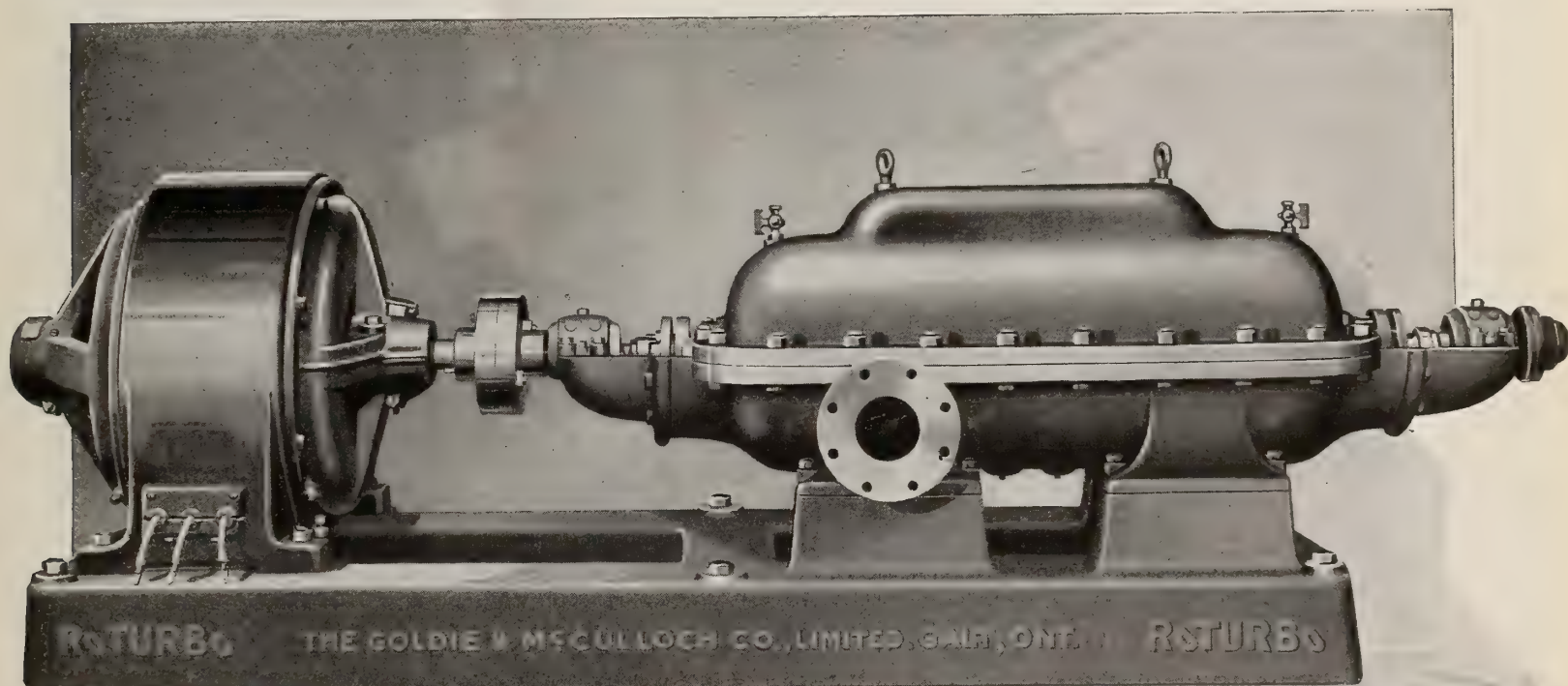
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ARE SELF-REGULATING

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Motor Driven Type B4, Eight Stage REES RoTURBo
Patent Pressure Chamber Pump

A high pump efficiency rating amounts to very little unless it remains constant over a wide variation of pressure heads. RoTURBo design meets these requirements. Its self-regulating features also insure your prime mover against damage by overloading.

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The Circo Page

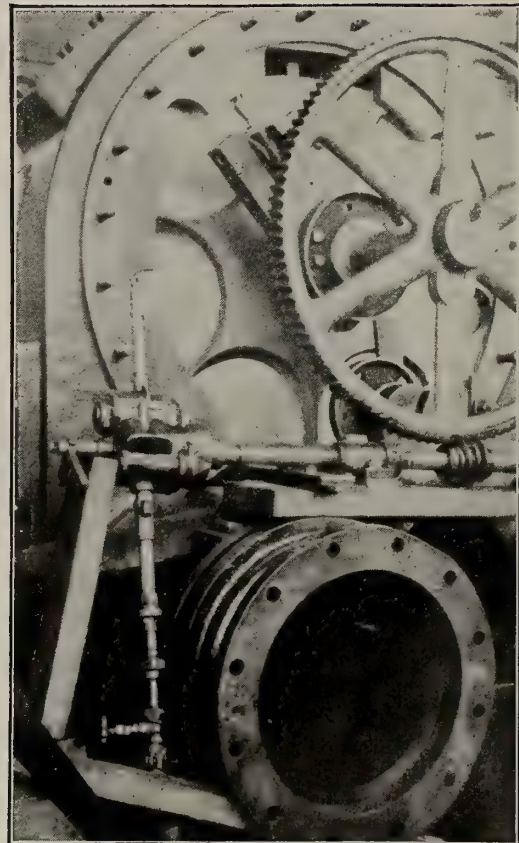


The Adaptable "Little David"

The "Little David" Drill is useful not only for reaming and drilling small holes. Here is a picture taken at one of the large Canadian mines showing the "Little David" harnessed to a boring bar working on a big air cylinder.

Lots of Power

Another use has been found for the "Little David" drill. With the screw driver attachment shell box covers are screwed down in 40 seconds, a reduction of over 200 per cent. compared to hand labor.



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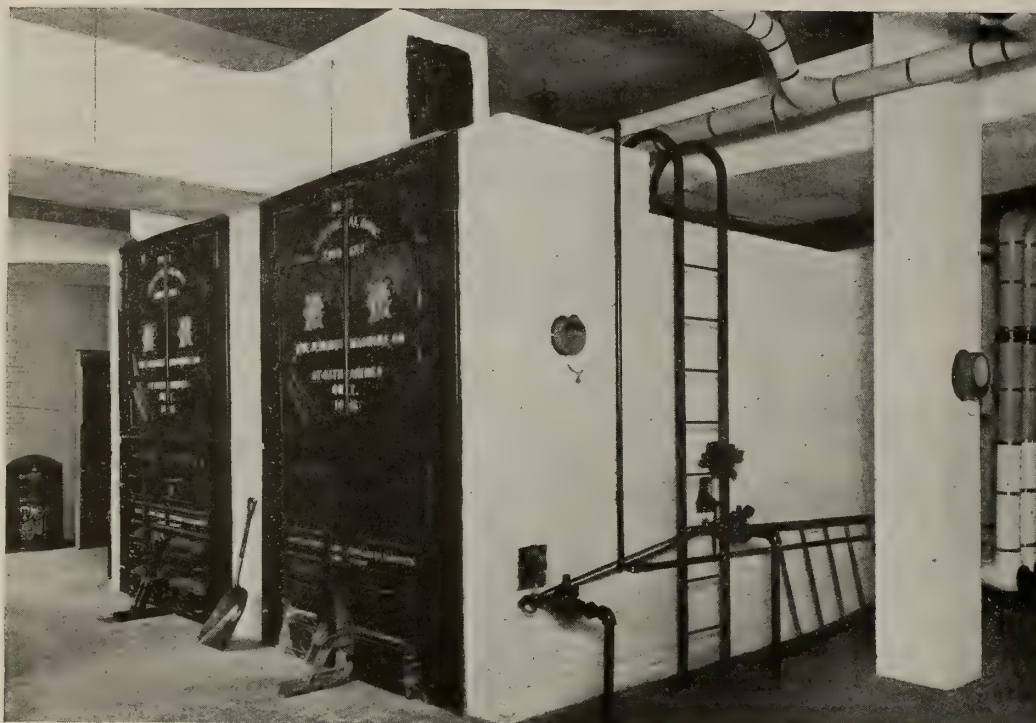
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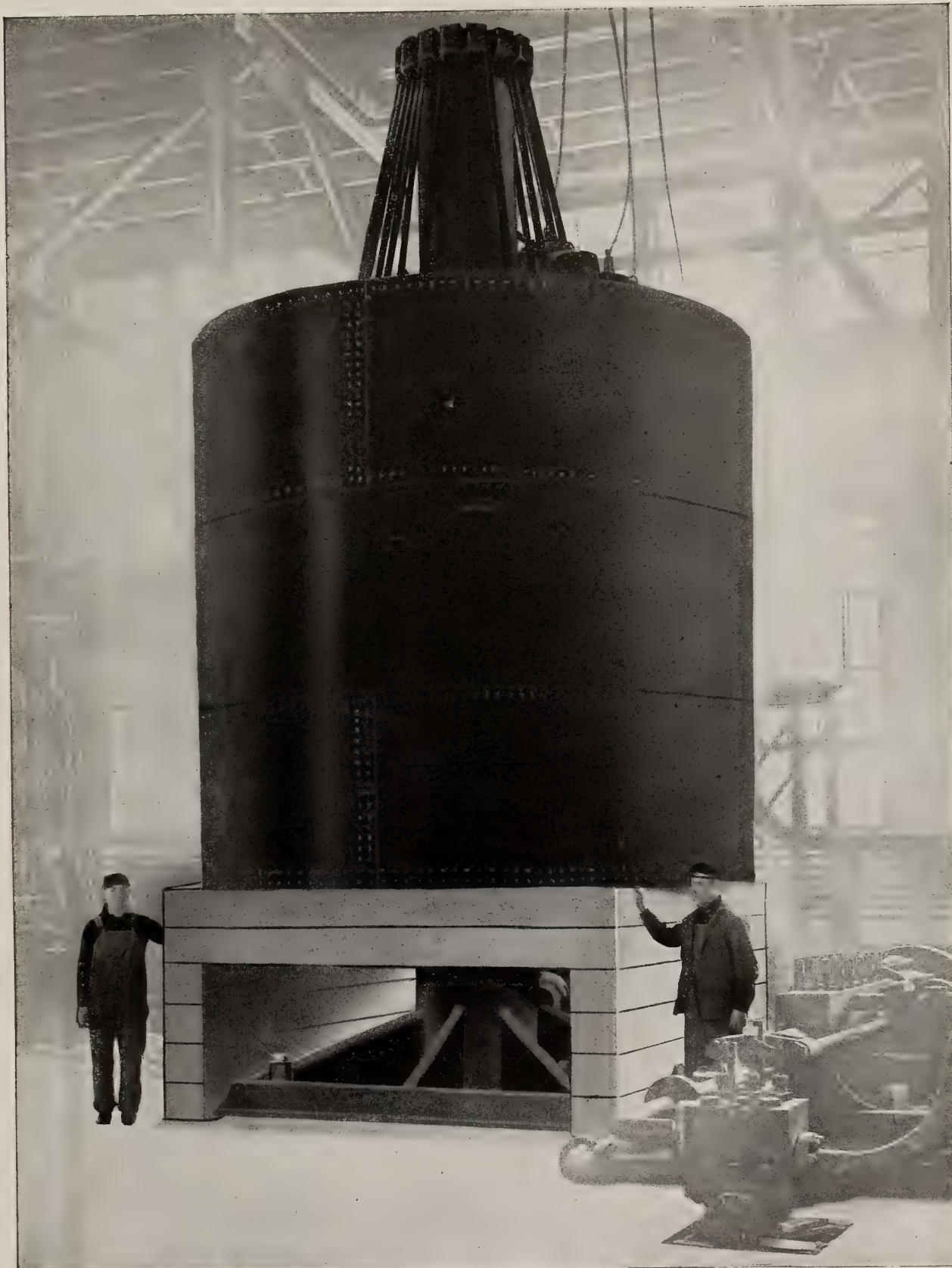
ARE made in over two hundred styles and combinations to meet every known requirement. We will assume entire responsibility in selecting the proper styles and combinations of our packings to work successfully and economically under any stated condition; and if goods are not wholly satisfactory to purchaser, we will refund promptly the cost of them. A card will bring our catalog, which fully describes our various styles of packings.



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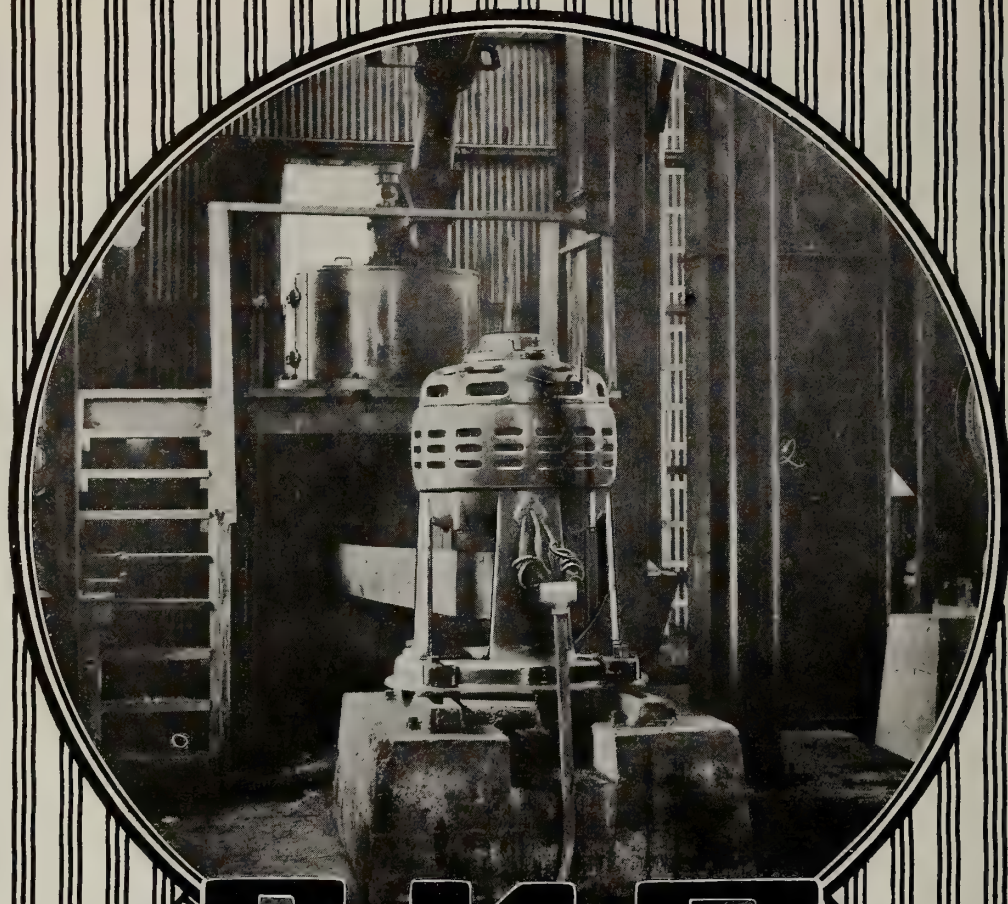


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BALL BEARINGS

Sealed Against Coal Dust

Flying particles of fine coal dust soon play havoc with plain or bronze bearings. That is why the Pulverized Coal Plant of the Atchison, Topeka and Santa Fe Railway use SKF equipped Fairbanks-Morse Motors. Sealed housings prevent the intrusion of grit, dust and moisture. And more too, S K F equipped motors require much less lubricant. No handy man required to constantly oil these motors and guard against hot boxes. Many other advantages are enumerated in Bulletin No. 70. Send for it to-day.

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Wherever mouldings are to be made—especially where a machine is needed which is so sturdily built that it will run year in and year out with few or no repairs—

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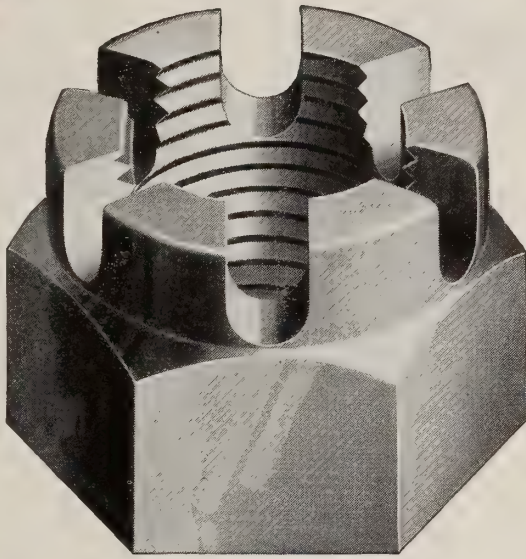
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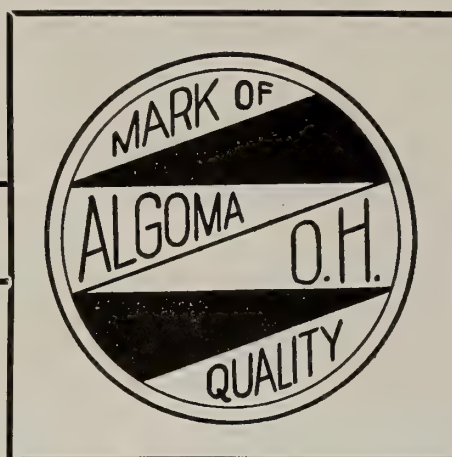
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RAYNTITE

Moored fore-and-aft, the weather side securely curtained with Rayntite, you are absolutely protected from wind and wet.

Du Pont Fabrikoid Rayntite is weatherproof under all conditions. For Boat Tops, Car Tops and Side Curtains and for all purposes where a light, tough, dependable covering is desired, Rayntite is ideal—it carries our Guarantee against leakage, for one year.

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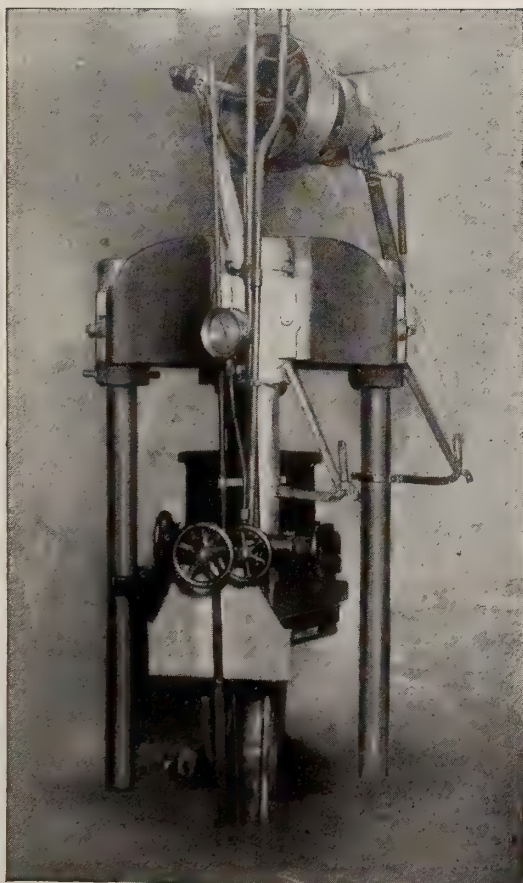
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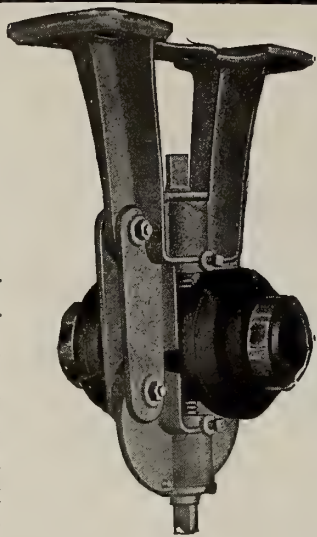
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YOUR BIT

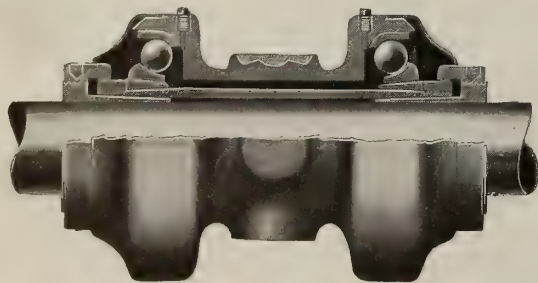
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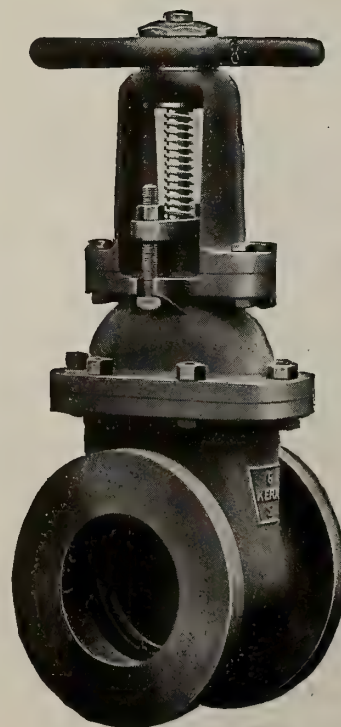
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The right kind of valve is one that is adapted to your particular service. Different services under different conditions necessitate different types of valves. Don't guess. Consult us. When **MUELLER** valves are installed under our supervision we fully warrant them to control the service for which they are recommended. We make valves for water, steam, gas, air, oil and ammonia.

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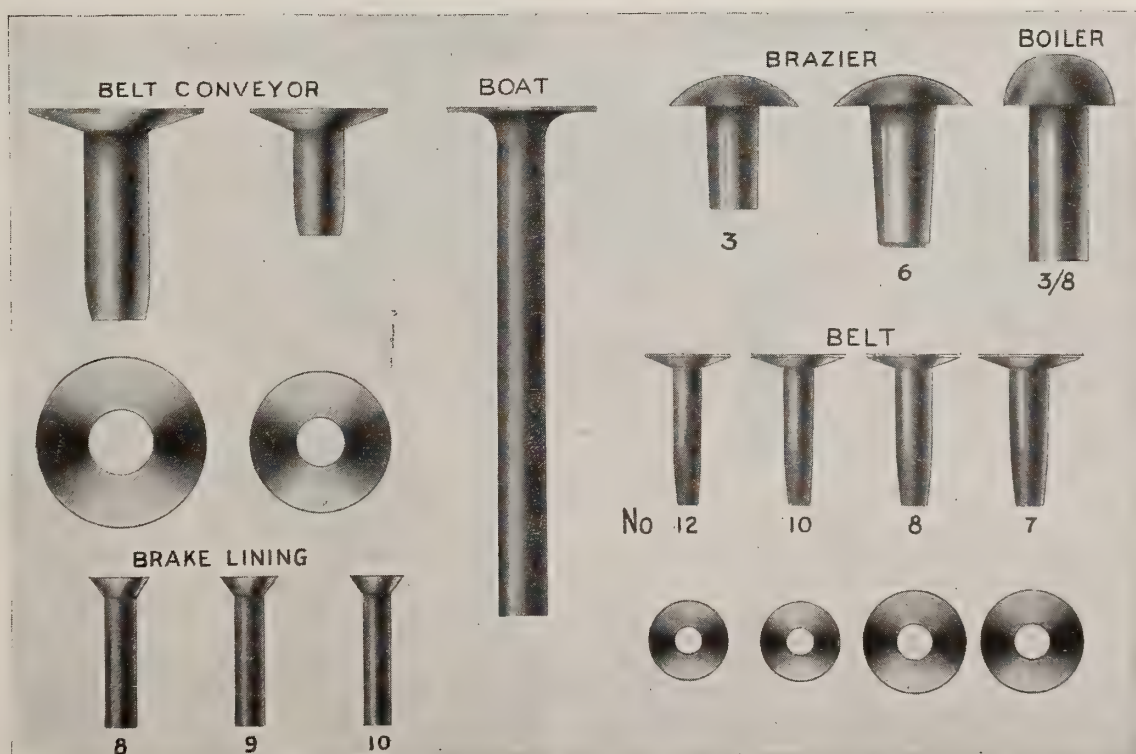
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1....	15	3	1500	220	25	Yes	T.H.E.	
1....	10	3	1500	220	25	Yes	T.H.E.	
2....	5	3	750	550	25		Westinghouse	CCL
2....	½	1	1500	110-220	25		Century & Wagner	
1....	½	1	1800	110	60		Fort Wayne	
1....	¼	1	1800	110	60		Westinghouse	
1....	¼	1	1800	110	60		Fisher	
1....	40	2	900	220	60	Yes	Fuller Wenstrom	
1....	15	2	1200	220	60	Yes	C.G.E.	
1....	10	2	Variable	220	60	No	Westinghouse.	CCL
2....	10	2	1200	220	60	Yes	Westinghouse	
1....	10	2	1800	220	60		T.H.E.	
1....	7½	2	1200	220	60	Yes	Crocker Wheeler	
2....	5	2 or 3	1800	220	60		Westinghouse	CCL rewind
2....	5	2	1200	220	60	No	Westinghouse	C
3....	5	2	1800	220	60	No	Westinghouse	CCL
2....	1	2 or 3	1800	220	60	No	Westinghouse	CCL rewind
1....	½	2	1800	220	60	No	Westinghouse	CCL
2....	10	2 or 3	1200	220	60	No	Westinghouse	CCL rewind
1....	3	3	1200	220	60	No	Westinghouse	CCL
2....	3	3	1800	220	60	No	C.G.E.	rewind
1....	20	3	900	220	60	Yes	Lincoln	
4....	7½	3	1800	220	60	Yes	Lincoln	

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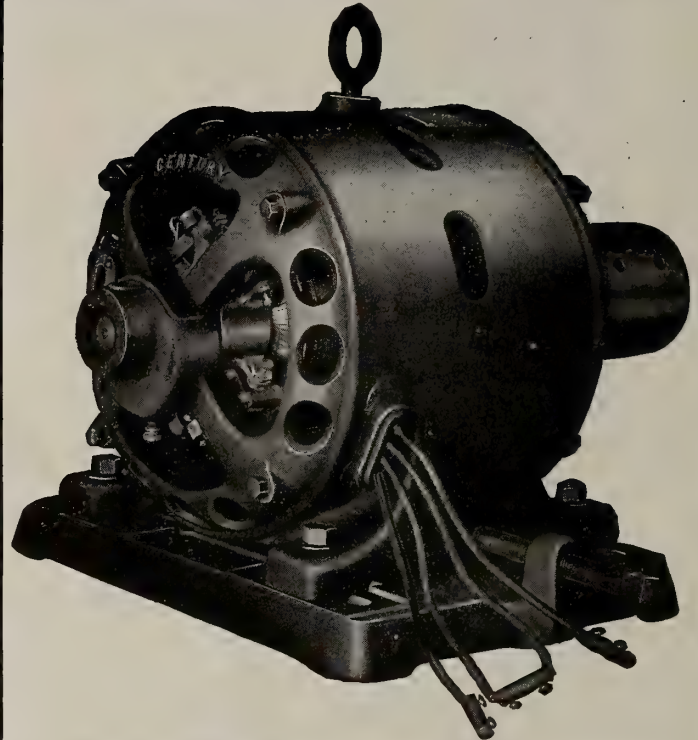
99-103 McNab St. North, Hamilton

Jones & Moore Electric Co.

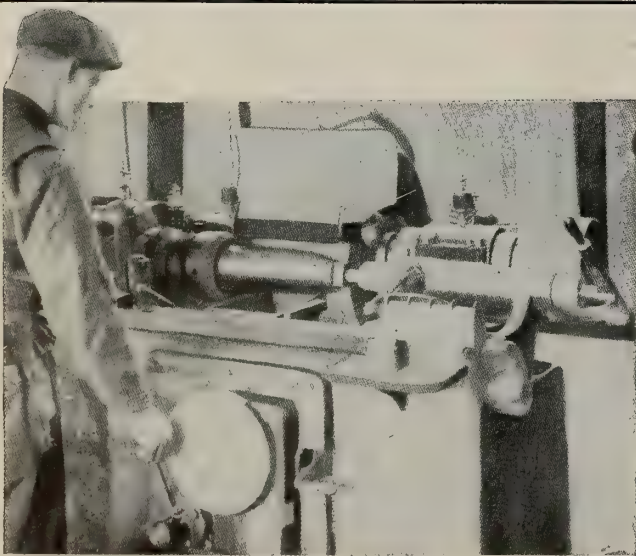
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Canadian Hart Wheels

are used with great success in grinding

SHRAPNEL AND HIGH EXPLOSIVE SHELLS

Canadian Hart Wheels cut faster and longer than any other grinding wheels. Put your grinding problems up to us.

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Manufacturers of Grinding Wheels and Machinery
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A Machine Standing Idle

waiting for repairs, puts a whole department out of joint.



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Gets a hustle on the repair job.

Every factory should have one or more.

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Illustrating the comparative values of the one color halftone and a simple color addition to the same.

The halftone is from the 1918 Catalogue of D. E. Black & Co., Calgary, Alberta.

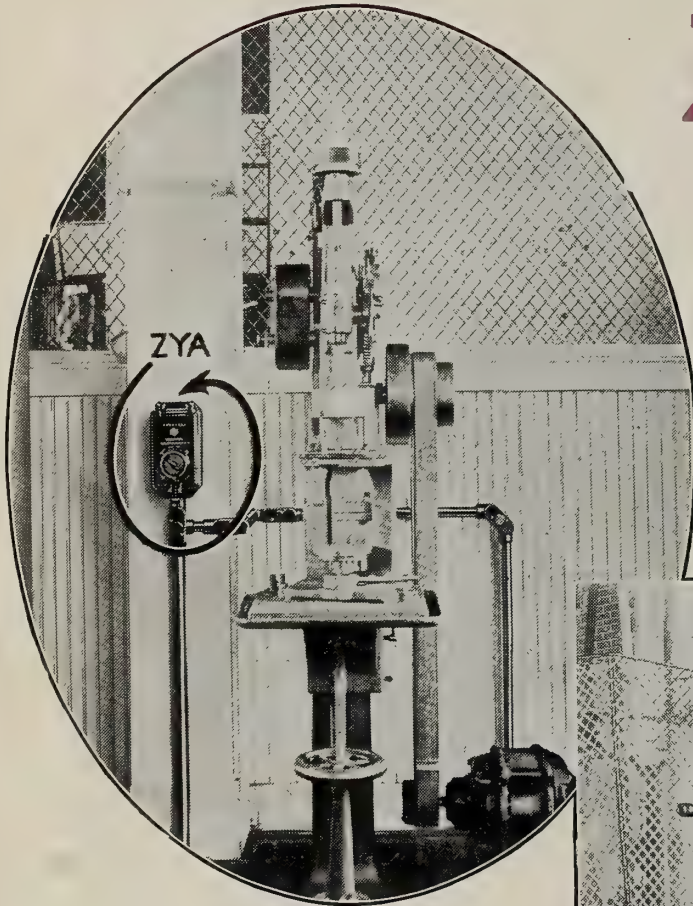
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Our Color Department recommends color only when color will pay.
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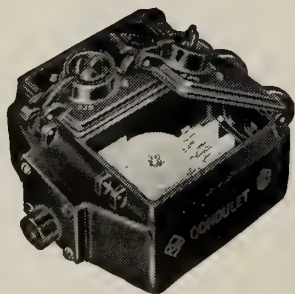
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TORONTO CANADA'S LEADING COLOR PRINTERS MONTREAL

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ZY Condulets

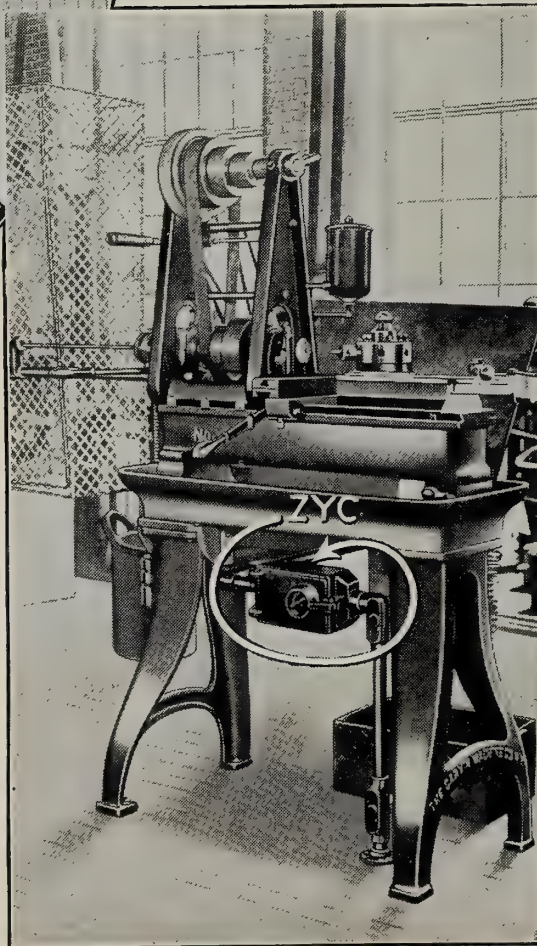


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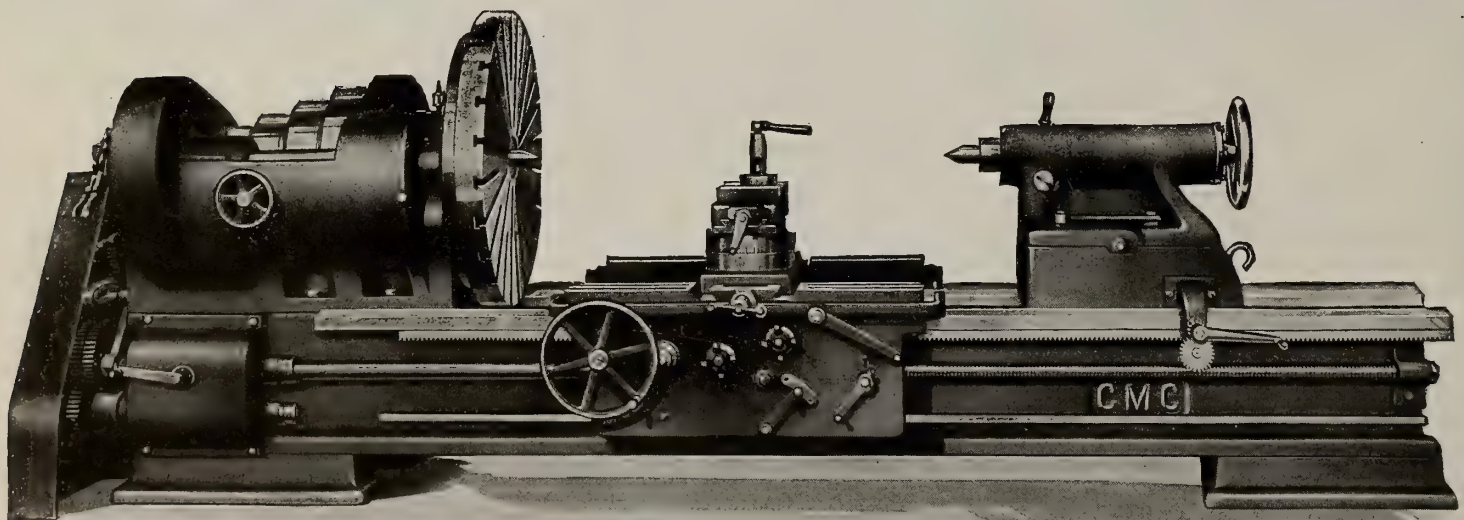
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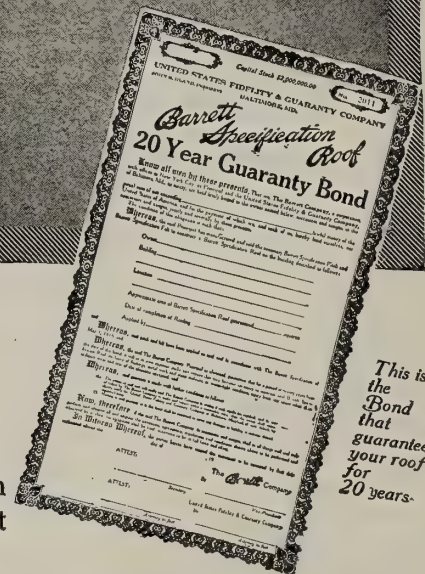
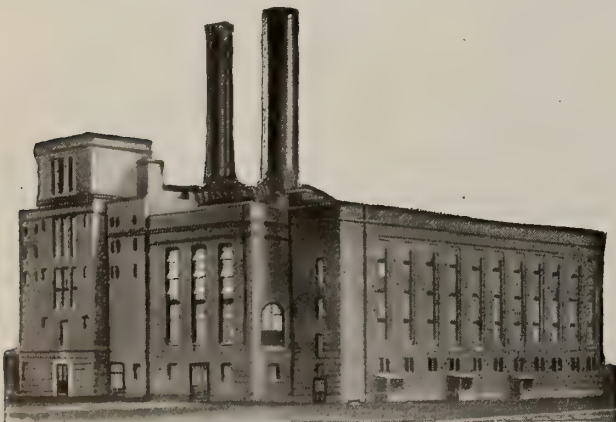


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What is Executive Ability?

WHEN we pause to consider the effect of the war upon our social life and methods of thinking, we cannot but be surprised at some of the changes which have been brought about. For instance, in the great stress of war conditions the professional politician has found himself unable to cope with affairs and has been obliged to let strong business executives take the helm. We see that at Ottawa especially, where the guiding lights of administration are men who have carried their way to success by executive ability.

What is meant when we speak of executive ability? It is the faculty of getting things done. The man in a executive position is a man who justifies himself by getting things done in the right way, nothing more or nothing less. The old theory that if all people were suddenly reduced to a position of social and economic equality a few would soon rise above the rest and that the same relative positions would be resumed, that previously obtained in society, has been proved by the war to be true. While industry has been socialized to a great extent, the very men whose executive ability is the driving force in the business world have had to be called in to run the

industries for the country. There will always be room in the world for the men of executive ability—the men under whose leadership others will do things willingly and efficiently. This is why the call of country and of duty has come and has been heard by so many of our captains of industry who are to-day carrying burdens of national service.

Daylight Saving

IT is announced that "Daylight Saving" is to continue till October 31st. It is to be hoped that the Government by Order-in-Council or otherwise, will see that the date is changed to October 27th. The former date is a Thursday and the latter a Sunday, and Sunday is the proper day to make the change—besides the United States will make the change on that Sunday morning at two o'clock, and there is no reason for dislocating our trains, our telegraph service and other international connections for four days just for the sake of "acting up" different. Action should be taken at once so that the railways may have plenty of time to make their announcements.

"Daylight Saving" has been a great success. Of course the whole calendar is a human contrivance and has been revised again and again. It is only two hundred years since we changed the beginning of the year from March to January and skipped eleven days to correct an error in Pope Gregory's calculations. After all, what is important is not how we measure our time but what we do with it. The more convenient the measurement, the better no doubt for our work.

The Freight Rate Increase.

IN the memorandum given to the press, apparently by the Board of Railway Commissioners, announcing the recently authorized increase in rates, no specific reference is made to the former increases. An estimate is shown of what the 25 per cent. increase would amount to based on the railway statistics for 1917. No specific mention, however, is made of the 15 per cent. increase effective March 15th last, to which has been added, in so far as Eastern Canada is concerned, an increase of 25 per cent. The railways, through the press, have stated that the last increase would amount to approximately 20 per cent. Our

criticism is not of the amount of the increase, but rather of what seems to be the failure to show, to some extent, the total amount of increases which the public has been called upon to pay.

In July, 1916, the railways were allowed an increase of not less than 5 per cent., and in many cases considerably more. A further application was made for a general increase of 15 per cent. in 1917, and received the endorsement of all commercial organizations with the exception of one or two in the West. The evidence was all in before the 1st of July, but for some reason or other the Board did not grant the application until December, and then permitted the publication of the tariffs on less than thirty days' notice. It is true that these tariffs, on the complaints of the Manitoba Government and the Winnipeg Board of Trade, were suspended, and did not come into effect until March 15th. They have, however, been in effect since then, in so far as Eastern Canada is concerned, subject to the modifications provided for in the Board's order.

Mr. Balfour on Academic Training.

SOME sensible views were expressed the other day by the Right Hon. A. J. Balfour, at a meeting in London to consider the establishment of a commerce degree at the University of London. Mr. Balfour said there was a large number of people who, in their hearts, if not explicitly, were inclined to think that in the practical matters of life anything in the nature of academic training was of little value. These people considered that the actual practice of life and actual work in the particular business to be followed were the best training that a man could have, and that everything in addition to that not only added very little to his effective value as a unit in the great industrial army, but might in some cases actually interfere with his utility. Mr. Balfour did not agree with that conclusion. It was perfectly true that no operation in the world would make up for the original deficiency when there was a deficiency in the raw material to be educated. Nothing would supply the presence of mother wit. There was no substitute for the energy, originality, tact, insight, courage, and enterprise which in commerce, as in every other walk of life, were a sure and most certain instrument of success. These he did not think an academic education could supply, and if nature had been originally niggardly in her distribution of these great gifts, nothing that they could do would wholly make up the original defect. It was also true that they constantly saw—and history confirmed that conclusion—that mere success in the examination, mere power to reproduce rapidly and effectively what had been taught in the lecture room, were qualities which did not always carry with them—very often did not—any sure security for success in the day-to-day practical work of life.

Nevertheless making allowance for those two qualifications, it still remained true—the subtle conclusion of

mankind based upon a long experience—that education was of immense value to the educated. Put into competition two units—one educated and organized, the other uneducated and unorganized—and the second would be at an undoubted disadvantage. It was no adequate reply to say that education had turned out prigs and pedants. So it had; but if the prigs and pedants had been uneducated they would not have deserved those epithets, but would probably have been just as useless members of society, the only difference being—which told against his argument—that if they had been uneducated they would have been, though not more useful, somewhat less pretentious members.

There was also a great deal that was true in the criticism that if they narrowed down academic education to the practical needs of life they thereby vitally maimed and narrowed it. They might destroy education, or greatly impair its value, by keeping constantly before the mind of the pupil the narrower, he would not say more sordid, but the less elevated aspects of his study. The man who thought of nothing through all his time of learning but exactly what that learning could be turned into in the shape of £ s. d. would find, when he came to earn his living, that he had narrowed his outlook upon life, would be a less interesting member of the community, and would, on the whole and generally, though not universally, be less successful even from his own point of view. They had to be on their guard against lowering the academic standard by having too close a regard to the purely utilitarian aspects, and when the subject they were teaching was so utilitarian as commerce, the danger was perhaps greater than when it dealt with the more generous interests.

After all, it was breadth and proportion of view which ought to be maintained. There were people who really seemed to talk as if the infinite activities of the industrial world were something almost beneath the notice of highly educated and intelligent men. A profounder mistake did not exist. In conclusion, he urged that the City of London should welcome this effort, and give it practical and pecuniary support, without which it could not succeed.

The Drift Towards State Socialism.

ADVOCACY by the Federal Trade Commission of the United States of government ownership and operation of large properties, such as packing plants, impels the *Railway Age Gazette* to make a protest against the extension of what it terms state socialism.

"In the emergency of war the Federal Government, for more or less substantial reasons of national defense, has assumed the operation of some industries and adopted rigorous control of others," comments the *Gazette*. "Even the western farmers, in spite of their great political power, have not escaped; they have had the price of their wheat fixed. Once the government has taken over the operation

or control of any industry it is always easy to find reasons why operation or control by it should be continued. Already from the experience of the war there are being drawn arguments in favor of extending the application of war emergency measures into the time of peace.

"The situation which has developed is curious. The advocates of government ownership, most of whom are socialistic in their tendencies, and many of whom have been mixed up in pacifist and pro-German propaganda, are trying, from our experience with government activities during the war, to draw arguments in favor of state socialism after the war. The owner of the largest group of newspapers and magazines in the United States is, through these publications, vigorously advocating state socialism. The Attorney-General of the State of New York recently alleged he had evidence that on at least one occasion, Bolo Pasha, recently executed by the French Government, as a traitor, and Count von Bernstorff, who was then the German Ambassador to this country, met at the home of this particular publisher. On the other hand, many individuals and publications whose patriotism in the past has been beyond question, are now refraining from criticizing government activities during the war, and from drawing from them conclusions adverse to government management, because they fear it would be charged that the utterance of such criticisms and the drawing of such conclusions were unpatriotic.

"Doubtless it would be far more desirable from the standpoint of both war and peace for the American people to settle their questions of war in time of war and defer the settlement of their questions of peace until the return of peace. But the question of what kind of economic and industrial system we are going to have in this country after the war is second in importance only to the question of what means we must use to win the war. Therefore, when it appears that some are deliberately trying to use the war emergency to promote socialistic projects, and when the advocates of state socialism persist during the war in advocating their system for both war and peace, it becomes not merely inexpedient, but absolutely unpatriotic, for the opponents of state socialism to refrain from weighing and discussing even important war measures with a view not only to their working during the progress of the war, but also to the effect which the way they are now carried out may have on conditions after the war.

"There is one significant feature of the Federal Trade Commission's report which seems to have been generally overlooked. This is that in very large measure it is a condemnation of the Interstate Commerce Commission. A large, and probably the larger, part of the power the Trade Commission alleges has been acquired by the packers is due to their control and operation of live stock cars, refrigerator cars and terminal railroads. Now, for years the Interstate Commerce Commission has had control over these facilities by the exercise of which it could have adequately protected the railway companies and the producers and consumers of live stock. Therefore, if the packers have been allowed to

so use these facilities as to injure the public it has been due to the inactivity of the Interstate Commerce Commission. Certainly, the fact that the harm which has been done by the packers—if, indeed, harm has been done by them—could have been largely prevented if an important government body had exercised the authority it possessed can hardly be construed into an argument for giving greater authority to another government body.

"The *Railway Age* holds no brief for the packers. They have never been, in our opinion, distinguished by philanthropy in their treatment of the railways or the public. At the same time, we are constrained to express the opinion that most of the report of the Federal Trade Commission, and especially that relating to transportation facilities owned by the packers, is tommy-rot of just the kind that might have been expected from a commission that would employ Francis J. Heney as its chief investigator; that its recommendations are simply a part of the general movement for state socialism in this country; and that they have no importance except as a part of that movement. The real question is not whether the Government shall become owner and manager of the stockyards, private refrigerator car lines and other properties of the packers, but whether in these, as in other lines, the principle of state socialism, which has been exemplified on the largest scale in Germany, shall or shall not be substituted in the United States for the principle of private enterprise the application of which has been most largely exemplified in this country.

"There are many persons who believe that the Government is incompetent successfully to regulate private enterprise, but is competent to manage large industries. There are many other persons who believe the Government, so long as this country remains a democracy, can not be made competent to manage large industries, but that it is competent to regulate private management of large industries and that this is its proper function. Let us hope that we shall not, from the motive of false patriotism, allow the country to become so far committed to state socialism during the period of the war that it will be rendered unable to withdraw from it after the war."

Fire Waste in Canada.

THE Commission of Conservation has done a useful service in making a thorough study of the fire waste problem in Canada. Mr. J. Grove Smith, one of the experts of the Commission, was entrusted some time ago with the task of reviewing the whole field, and, after giving much time and thought to the subject, his findings and recommendations are now made public in one of the Commission's admirable series of reports. It is sincerely to be hoped that this book, representing as it does an earnest effort to cope with one of the most serious problems to be faced by the Dominion, will not be thrown aside and forgotten, but that its contents will be taken seriously to heart and its precepts put in force.

The report says that since Confederation fire loss in Canada, excluding forest fires, has been \$700,000,000. Of

this sum, \$350,000,000 is made up of direct fire losses, \$150,000,000 represents the cost of maintaining public and private fire protection services, whilst \$197,000,000 is the amount of insurance premiums paid but not returned to policy holders in compensation for losses. In addition, nearly 200 people are burned to death and about 500 seriously injured by fire every year. Canadian municipalities employ 4,200 men to extinguish fires, at an annual cost of \$4,000,000. In the four normal years, 1912-1915, Canada's annual per capita fire loss was \$2.73, as compared with \$2.26 in the United States, 64c. in England, 74c. in France, 28c. in Germany, and 13c. in Switzerland. A disquieting feature is that the losses in this country are increasing with great rapidity.

Mr. Smith says that 70 per cent. of fires in Canada are caused by the careless and ignorant use of property. This carelessness, he claims, is largely induced by a sense of individual security created by the present system of fire insurance, which cannot restore the values destroyed, but merely distributes the loss in the form of high insurance premiums and high cost of living generally over the whole community. Next in order to carelessness as causes of fire come faulty building construction, arson and lack of adequate fire prevention laws, such laws as exist being but poorly enforced. Canadian fire departments, the report continues, are the best in the world, but they are not preventing a steady growth of fire losses.

In dealing with the remedy for present conditions, Mr. Smith says that compulsory legislation, making individuals responsible for their own careless acts, is imperative. The public must be aroused to their collective responsibility, so that public opinion will urge and support the adoption of restrictive legislation that will penalize in every way possible the irresponsibility and negligence which are the principal causes of fire waste in Canada. Each Province, through its sovereign police power, continues the report, is the logical unit of control. Authority delegated to municipalities has proved to be almost worthless in effecting any diminution of fire waste, even in restricted areas. It is recommended that the provincial legislatures enact minimum requirements which, if desired, could be added to by the municipalities by whom they are to be administered. It is claimed that there is now too much diffusion of authority among officials, and that all fire prevention activity should be centralized in one local body, namely, the local fire department, which should be held strictly responsible, not only for extinguishing fires, but for preventing their occurrence. Not more laws, but better laws and better enforcement, is required.

The Dominion Government, not being given direct jurisdiction by the British North American Act, its function should be educational and advisory. It should conduct a campaign to educate the public to their responsibility and maintain a sort of intelligence system for collecting and digesting information gleaned from all over the world

on fire prevention methods and legislation. The purpose of this would be to assist provincial fire prevention efforts and would tend to keep provincial laws uniform and up-to-date. The Dominion Government, it is stated, should also maintain a testing laboratory to establish standards in building materials and devices. At present there is the utmost inconsistency in building by-laws. As an instance of this, it is stated that, under the Toronto Building By-law of 1913, well-compacted gravel or coarse sand is considered capable of sustaining twice as great a load as kiln-run bricks laid in lime mortar. Such a testing laboratory is urgently needed and could well be developed out of the present testing laboratory in the Dominion Mines branch. "The day of sound construction in Canada is being deferred through the lack of data on which to base reasonable requirements," concludes this section of the report.

Mr. Smith contends that the high cost of doing business implies extravagant administration on the part of insurance companies, and says that from 1869 to 1916 the public has paid the insurance companies 65c. for distributing every dollar of indemnity. This, he continues, gives food for thought when it is remembered that, under present government management, the collection of customs and inland revenue costs less than 5 per cent. of the receipts. Since the establishment of government insurance in New Zealand in 1905, the rates on mercantile risks have been reduced 10 per cent. and on dwellings 33 1-3 per cent. The report asserts that insurance agents in Canada are paid, on the average, a commission of slightly over 20 per cent., obviously a large expenditure on middlemen. It is also stated that the number of agents is excessive, a circumstance which makes necessary a higher commission than is economically necessary.

"The root evil of the insurance business and one of the greatest factors in the excessive fire waste in Canada is undoubtedly the method of compensating agents solely on a commission basis," the report declares. The careless agent is paid equally well with the careful agent. The more insurance he can place on a given risk, and especially a highly-rated and, therefore, dangerous risk, the greater will be his compensation. This tends to over-insurance, carelessness in the use and care of property, and arson, all of which cause a heavier fire waste. The remedy for this, the Commission states, is a profit-sharing commission for agents, whereby those who write good risks would be more highly remunerated than those who write bad ones. The Canadian Fire Underwriters' Association, it is pointed out, has attempted, but failed, to adopt a similar system of contingent commissions on account of the disadvantage under which it would place its members in competition with non-Board companies. The Commission of Conservation, therefore, recommends that uniform legislation be drafted into the Dominion and Provincial insurance acts to establish the principle of profit sharing commissions for all companies, leaving the companies and their agents to work out the details.

News and Views of the Association

IN this Department, which is now established as a regular monthly feature of INDUSTRIAL CANADA, will be found a record, contributed by the Secretaries and Department Managers of the Association, of the various activities of the preceding month. August being taken up so largely with vacations and the work of the Association being in consequence somewhat interrupted, it is not possible to give any very lengthy report this month. However, members are urged to acquire the habit of reading and checking over the contents of this Department carefully.

Labor Sub-Committee

Under Senator G. D. Robertson, as chairman, labor is represented on the Sub-committee of the Reconstruction and Development Committee of the Dominion Cabinet. The sub-committee will keep the Reconstruction and Development Committee in touch with labor conditions throughout Canada, and to recommend for its consideration policies and measures to be adopted in respect of labor problems both during the war and as they may arise after the termination of the war.

The members are Hon. G. D. Robertson, chairman; Hon. T. W. Crothers, Minister of Labor; Prof. R. M. MacIver, of the University of Toronto; Herbert J. Daly, manufacturer and merchant, Toronto; J. C. Watters, President of the Trades and Labor Congress of Canada, and Calvin Lawrence, legislative representative of B. of L.E.

Labor Board of Appeal

The Labor Board of Appeal has dealt with the Ottawa Street Railway Appeal (in first case) and prevented a strike by awarding the men a higher rate of wages than recommended by the Board of Conciliation. It is interesting to know that the result of this decision has evoked the general approval of all parties.

Herbert J. Daly, manufacturer, of Toronto, was selected by Senator Robertson, Acting Minister of Labor, as Chairman of the Court. The other members of the Appeal Court were S. R. Parsons, Toronto; G. H. Duggan, Montreal; John W. Bruce, Toronto; and Gustave Franco, of Montreal.

Export Trade

Toronto manufacturers who are members of the Canadian Manufacturers Association, at the instigation of Major L. L. Anthes, are forming a Dominion-wide Committee to study the Export Trade question. Hon. Frederick Nicholls, who has made a special study of the Foreign Trade question and recently delivered trenchant speeches in the Canadian Senate on the subject, will be the chairman of the new committee.

In spite of much that has been said, no concerted action has yet been taken in Canada in an endeavor to grapple with post-war trade problems. It is recognized

that export trade development to-day has three great needs: First, leadership; second, a definite policy; and third, the acquirement and dissemination of all export knowledge available.

The financial, industrial and commercial interests must co-ordinate their efforts and in co-operation with the Trade and Commerce Department evolve some well-devised plan of action to give Canada her fair share in overseas trade.

The Freight Rate Increase

As indicating the view taken by many of the manufacturers the following is a letter received from one of our members:

"We have yours of the 27th, freight rate increase. Would state that the purpose of our addressing our last letter to you was to call attention to the fact that, while this increase is called a 25 per cent. increase, it actually totals between normal times and to-day, an increase of 50 per cent. As these increases have been made, except in the last instance, in small amounts of five or ten or 15 per cent. at a time, and as the public have generally been led to believe through the press that the increase would not exceed 25 per cent., it seems to us to be a proper matter to place it on its proper basis and call it a 50 per cent. increase, which it really is."

Co-operation

Much can be done by a spirit of mutual help and co-operation between public officials and the responsible heads of the industries to palliate the inconvenience that must be occasioned if we are to be visited with a severe shortage of fuel during the ensuing winter, as seems only too probable. It is reported that our allotment of soft coal for the current year is 16,000,000 tons. Last year we imported 17,300,000 tons. In other words, there is a clear shortage of 1,300,000 tons. The United States is at war and it is not going to allow war industries to suffer even if it has to cut down the coal supplies to the people in both countries. The attitude at Washington is that those industries in the United States that are being restricted in the use of coal should likewise be restricted in Canada. In other words we must do what is being done in the United States, otherwise it may interfere with our supply of coal.

It is gratifying to know that our technical men are thoroughly alive to their patriotic duty in the present

national emergency. A fine example is furnished by a voluntary offer received by our head office from the Canadian Association of Stationary Engineers, of their services as consulting engineers to the members of the Canadian Manufacturers Association during the ensuing winter, without charge, so far as this may be possible without neglecting their own duties.

The Executive Council of the C.M.A. recently accorded its unanimous support to an application of the Stationary Engineers to the Trades and Labor Department of the Provincial Government in favor of the grading of stationary engineers' certificate, inferring a considerably higher standard of technical attainment. Hence, the members of the Canadian Association of Stationary Engineers, in turn, desire to express their appreciation in practical form, which it is hoped will be taken advantage of. The stationary engineers have communicated this resolution also to the Dominion Fuel Controller.

After-the-War Labor Situation

Toronto manufacturers who are members of the Canadian Manufacturers Association have formed a representative committee from among themselves to deal with labor questions and problems. Attention will be turned mainly towards the problems that are likely to arise after the war, and they will bend every effort to meet problems of reconstruction.

While there is a great scarcity of labor now, they believe that after the war the situation will go to the opposite extreme, and it is imperative that this phase of labor conditions be dealt with, keeping primarily in mind everything that can be done to afford employment to returned soldiers.

The committee discussed the evils of fluctuation in employment and felt that with labor in the ascendency, a common meeting ground must be found. Hitherto, organized labor has insisted on a certain standard, and employers on another, leading to suspicion and distrust. The organized effort of both the Government and employers will be required to insure the success of measurably adequate remedies.

Probably the most important question for both employer and employee is the one of supervision. To correctly and justly supervise the work of others, one should possess certain qualifications and undoubtedly a great deal of the present dissatisfaction is due to the inefficiency of supervision. A trained supervisor would lead instead of drive. He would, by his special training, lessen the work and reduce the present high percentage of labor turn-over. He would save worry for both employer and employee and would be a most important factor in the country's industrial progress.

While building up the home market, the importance of extending export trade will be carefully studied. The Government, through the Department of Trade and Commerce, will be urged, while putting forth efforts to build up domestic trade, to facilitate and foster foreign trade. In this respect, it is evident that little can be done without the whole-hearted co-operation of the Government, the manufacturers, labor organizations, bankers, transportation agents and educational authorities.

This new Labor Committee has offered its hearty co-operation to the Labor Sub-committee of the Reconstruction and Development Committee of the Dominion Govern-

ment, and it is gratifying to know that the Government's sub-committee will, through Mr. H. J. Daly, one of its most useful members, be in constant touch with the manufacturers, so that the Government may have the benefit of their advice and suggestions on all matters which may be of common interest.

New Carload Minimum Weights

Mention was made in the last issue, of a conference held in our offices here on July 18th and 19th, in connection with the proposed increases in carload minimum weights between points in Canada east of Port Arthur on shipments moving in carloads under what are known as "commodity rates."

For the information of our members we submit herewith a list of the different commodities showing opposite each the "present minimum" and "new minimum." It is suggested that members examine this list very carefully, taking note of the articles in which they are interested, with a view to loading cars in accordance with the new minimum weights.

It is our understanding that these new minimum weights will become effective October 1st, 1918.

Commodity.	Present Minimum.	New Minimum.
Acid, acetic, in barrels.	24,000	36,000
Ammonia, sulphate of..	50,000	60,000
Asbestos cement	40,000	60,000
Asbestos fibre	24,000	40,000
Ashes, coke	50,000	60,000
Bags or bagging (cotton or jupe in bundles)	24,000	30,000
Beans	40,000	50,000
Beans, mixed with grain products	40,000	50,000
Beet pulp, sugar, wet..	40,000	60,000
Bleaching powder in barrels, casks or drums	30,000	40,000
Bottles, glass	24,000	30,000
Brick or lining, stove..	30,000	60,000
Brick (specific commodity rates only)	50,000	Marked capacity of car
Calf meal	40,000	45,000
Canned goods	30,000	40,000
Cardboard	30,000	36,000
Ceiling board and wall-board	30,000	36,000
Cigar box lumber.....	30,000	36,000
Coal	Varies from 25 net tons to marked capacity of car	Marked capacity of car but not less than 60,000 lbs.
Coal screenings		
Cooperage, stock, staves and heading	24,000	40,000
Staves, headings and hoops, mixed cars...	24,000	35,000
Cotton mill sweepings..	24,000	30,000
Cross arms	30,000	45,000
Caustic soda	40,000	50,000
Filled boards	30,000	36,000
Ferro silicon	30,000 to 35,000	60,000
Grain products, straight or mixed cars, except bran and pea and oat hulls	45,000	50,000
Granite	60,000	Marked capacity of car but not less than 60,000 lbs.
Hay, domestic consumption or export	20,000	24,000
Hubs, wood	30,000	40,000
Leather, scrap or refuse	20,000	24,000
Linseed oil in barrels..	24,000	30,000
Marble blocks and marble waste	60,000	Marked capacity of car but not less than 60,000
Marble	60,000	Do.

Commodity.	Present Minimum.	New Minimum.
Mill cinder and scale...	18 gross tons	Marked capacity of car but not less than 30 gross tons
Nitre cake	50,000	60,000
Mill board	30,000	36,000
Iron ore	25 gross tons	Marked capacity of car but not less than 30 gross tons.
Ore, silver	40,000	60,000
Paper:		
Bags	30,000	36,000
Core	30,000	40,000
Envelopes	30,000	36,000
Newsprint	30,000	40,000
Printing	30,000	40,000
Toilet	30,000	30,000
Unfinished, in rolls...	30,000	40,000
Wall, unfinished in rolls	30,000	40,000
Wrapping	30,000	40,000
Writing	30,000	36,000
Bags, toilet and wrapping, mixed cars...	30,000	36,000
Petroleum products in packages	26,000	30,000
Pig lead	30,000 to 36,000	60,000
Rails and fastenings..	Rails 30 gross tons 30,000 to 60,000	Marked capacity of car but not less than 60,000
Rice and rice flour....	24,000	36,000
Rosin	40,000	50,000
Salt	45,000	50,000
Scrap leather	20,000	24,000
Scrap tin	40,000	50,000
Starch, straight cars...	24,000	30,000
Syrup and glucose ...	30,000	40,000
Starch, syrup and glucose, mixed cars ...	24,000	30,000
Sugar	30,000	40,000
Stone, field	80,000	Marked capacity of car but not less than 60,000
Spray composition in metal cans	24,000	30,000
Do. in wood..	24,000	36,000
Syrup and molasses....	30,000	40,000
Tankage	40,000	60,000
Wood pulp	40,000 to 60,000	50,000 in rolls 60,000 N.O.S.
Wood pulp board.....	30,000	36,000
Iron and steel articles in box cars	Various	40,000
On flat cars	Minimum not to be increased but understanding is that wherever possible cars are to be loaded to capacity.	
Bars, muck, or puddle.	25 gross tons	30 gross tons
Billets, blooms and ingots	do.	do.
Crop ends	do.	do.
Pig iron	do.	do.
Wire rods	do.	do.
Chain, iron or steel....	30,000 to 60,000	40,000 except no reduction will be made where tariffs provide a minimum in excess thereof.

Note.—The minimum weight for fixed carloads of manufactured articles of iron and steel as shown in the lists contained in the various tariffs will be 40,000 lbs.

Building Materials:		
Cinders, coal	50,000	60,000
Clay, common	80,000	Marked capacity of car but not less than 60,000
Gravel	80,000	do.
Gypsum rock	80,000	do.
Sand, building or core	80,000	do.
Slag furnace	80,000	do.
Stone, cobble, crushed, etc.	80,000	do.
Stone screenings	80,000	do.
Blocks, building, concrete	50,000	do.
Blocks, gypsum	50,000	do.
Blocks, paving, asphalt or stone...	80,000	do.
Blocks, plaster, fire-proofing	50,000	do.
Brick, building except enamelled or glazed	50,000	do.

Articles Appreciated

Amherst, N.S., August 29, 1918.

Editor, "Industrial Canada."

I was pleased to notice the article dealing with Canada's Housing Problem in the last issue of "Industrial Canada" and also the articles in the late issues by Robert Arkell on "Industrial Warfare." I have no doubt that employers would be interested in articles illustrating ways and means of reducing the labor unrest, and possibly you might be able to procure papers dealing with such subjects as Reduction of Labor Turn-over, Profit Sharing, Pension Schemes, Industrial Welfare Work, Medical Inspection, Bonus and Piece-work Systems, Employment Departments. With reference to this latter subject I understand that certain colleges in the United States are giving courses for employment managers. I know you have had articles in the past dealing with some of these problems, but it is my belief that the oftener they are put before us the larger the benefits which will be derived therefrom.

Yours very truly,
"READER."

Commodity.	Present Minimum.	New Minimum.
Fire brick and fire clay, straight or mixed carloads	50,000	Marked capacity of car but not less than 60,000
Sand, moulding	80,000	do.
Sand, common	80,000	do.
Drain tile, concrete or earthenware	40,000	50,000
Lime	40,000	50,000
Plaster, wall in packages	40,000	50,000
Roofing tile earthenware	40,000	50,000

Manufacturers' and Farmers' Unions to Meet in Conference

It is expected that keen interest will be aroused over the approaching conference between the Canadian Council of Agriculture and the Canadian Manufacturers Association. The meeting will probably take place in Winnipeg at the end of October or beginning of November.

The challenge of the grain growers, through their official organ, to the manufacturers to declare themselves on the tariff was boldly met at the annual convention of the C.M.A. in Montreal in June, by Ex-President Parsons in a memorable address. Hence, the Canadian Council of Agriculture has now extended an invitation to the manufacturers to send representatives to a conference, indicating that the quondam spirit of antagonism growing out of political and commercial friction is being happily overcome.

Our Western farmers and the manufacturers wisely turned from a struggle over the balance of advantage toward a careful regard for the mutual benefits of their natural relationship. It is most hopeful for the future that struggles for class advantage are giving place to earnest mutual consideration. "If," said President Parsons, "the agriculturalists of the West are not receiving proper consideration, then we should be the first to co-operate with them to remedy their defects." It must be admitted that there has been in the past far too much long-distance sniping and not enough of the spirit of sweet reasonableness between industry and agriculture. Perhaps there has been a lack of diplomacy on both sides. We believe that leaving out the extremists the farmer is as willing as anyone to live and let live. At the present time the farmer is getting a fair price for his produce, and with these prices assured him, he would have little to complain about.

In any circumstances, it is sound policy for business men to gather the facts in connection with their business in so far as they can, so they will be prepared to speak intelligently of the needs of the industry in which they are engaged.



How the Technical Schools are Used

Disabled soldiers receiving preliminary instruction in house wiring in the electrical laboratory of McGill University. Later these men will complete their course of training by doing practical work with contractors

Canada's Industrial Re-education System

Co-operation of Manufacturers has been Secured and a Survey of Factories Made in Order to Find Wider Opportunities to Train Men—Systematic Methods have been Followed in Order to Give Every Man as Wide a Choice of Occupation as Possible and to Occasion Employers the Least Possible Inconvenience

By C. NORMAN SENIOR

[The indisputable evidence of recent months that Canada leads the world in her system of caring for disabled soldiers, led the Editor of "Industrial Canada" to enquire for details of the methods which were so highly acclaimed at the "Inter-Allied Conference on the After-Care of the Disabled," and which have been copied almost exactly by the United States Government. At our request a member of the staff of the Department of Soldiers' Civil Re-Establishment has written the following article.]

INDUSTRIAL re-education (or vocational training, or technical education, or whatever you prefer to call it) as a means of re-establishing disabled warriors and of conserving a nation's productiveness in particular, appears to have received its first real recognition in the present great conflict. The idea, once having been promulgated, was so obviously right and economic that practically every beligerent state seized upon it and put it into practice.

Canada's first efforts were made independently by technical educationists in Calgary and Halifax, but national recognition of the work was given almost at once. In 1915 the Dominion Cabinet gave formal authority to an organization submitted by Sir James Lougheed, Minister without Portfolio, and President of the Military Hospitals Commission. The work was placed in the hands of that Commission. When, last February, the Department of Soldiers' Civil Re-Establishment was created for the purpose of co-ordinating the Military Hospitals Commission and the Board of Pension Commissioners, an extensive organization had been established and much work done.

About 45,000 casualties have been returned to Canada. A special staff of interviewers is maintained by the Re-Establishment Department for the purpose of interviewing every one of these to ascertain whether or not his injuries or con-

dition of health are such as to prevent him from returning to the occupation at which he earned his living prior to enlistment. The proportion of such cases has maintained a fairly constant average of about ten per cent. An Order-in-Council provides that all who are so disabled by their war injuries as to be unable to resume their pre-war vocations are entitled to be trained for new occupations. The training is given at public expense, while the man and his family are maintained through an established scale of pay and allowances, based approximately on military pay and allowances and the Patriotic Fund allowance.

At the latest compilation of statistics (August 1st) 5,045 disabled men had been approved for specific courses of industrial re-education. The decision of approval is obtained through the operation of a well-defined procedure. When the original interviewer reports on the probable necessity of training, a medical officer sees the man in question and confirms the report from the strictly physical standpoint. This being done, the veteran is brought before what is known as a Disabled Soldiers' Training Board for the purpose of recommending a suitable new occupation for which he should be trained.

The Board consists of the Department's Vocational Officer, a Medical Officer and one other, usually an independent business man. The disabled man's inclinations are also an important factor in reaching a decision, for the obvious reason that inclinations are usually based on aptitudes. The members of the Board act as advisors to the soldier. It is the business of the Vocational Officer to bring to the conference information as to the possibilities for training. The medical officer states whether or not the man's injuries are such as to interfere

with the movements necessary to do given work. The business man is asked to advise as to whether or not there is likely to be permanency of employment at decent wages in any occupations that come under discussion. If further information is desired the Board sometimes adjourns until that information is obtained. Every effort is made to establish confidential, friendly relations with the disabled man and to show him that the Board has his interest at heart. Owing to the cost of a course of re-education, great emphasis is laid on the making of a wise selection in the first instance; a little extra cost at the outset being more than compensated for by reduction of the number of false starts which might be made if men were carelessly trained for occupations at which they could not make good. At the earlier stages of this work it was found that after two or three months training in one course a man would have to be changed into something else. A false start is also very discouraging to the man himself.

The Board's decision is subject to review by the Director of Vocational Training at Ottawa. Obviously at such great distance from the point of contact with the disabled man very few adverse decisions can be made, but centralization of the power of decision is a necessary administrative factor if a uniform policy is to be followed throughout the whole country. Occasionally, too, a recommendation which has proven fallacious in one district, when made from another, can be corrected.

The Director of the Branch

Sir James Loughheed has selected as Director of this branch, Mr. W. E. Segsworth, a retired mining engineer of broad experience in all branches of industrial effort. Mr. Segsworth first became interested in the work as a critic of certain policies. His criticisms were so sound and his judgment so correct on the nature of the problems and of the best methods to meet them, that he was invited to accept the position which he now holds. The many considerations involved in this task of advising a man in the selection of a new vocation are described more fully than space here permits in an article called "Occupational Guidance," appearing in the Department's May Bulletin.*

The course of training having been selected, the procedure by which the training is carried out is most interesting and quite unique.

It was taken as axiomatic from the outset that men should be trained fairly near their homes. Such a policy was necessary for a country so broad as ours. Existing technical schools, engineering departments of universities and other centres of training were utilized and their facilities made available for the Department's needs.

**Reconstruction*, issued monthly, will be forwarded to any address upon application to the Publicity Representative, Department of Soldiers' Civil Re-Establishment, 22 Victoria Street, Ottawa. Articles and news items upon re-establishment problems constitute the subject matter appearing in this periodical.

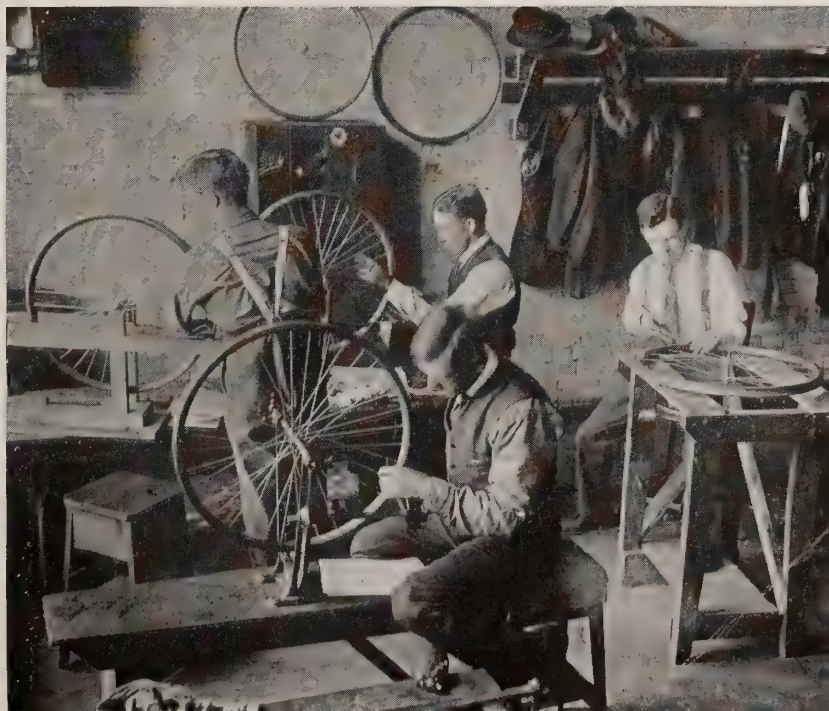
It was found, however, that only about twenty or twenty-five occupations could be taught in schools and to do this efficiently large centres had to be established in half a dozen different places at great cost. The psychology of the disabled man, very often well advanced in years, did not respond readily to school methods of instruction. Some variation was found necessary. It was finally decided that employers should be approached with a view to having men trained under actual shop conditions. A policy along these lines has been adopted and put into execution with great success. Manufacturers and employers generally have shown splendid willingness to co-operate in assisting the Department to conserve the country's labor resources.

Systematic Methods Followed

Systematic methods have been followed in the Department in order to give every man as wide a choice as possible and in order to occasion employers the least possible inconvenience. An industrial survey service was organized for the purpose of finding out and listing the occupations which could be performed by men having specific partial disabilities. After winning the sympathy of the proprietor or manager of a given factory to the work of the Department, the surveyor goes through his establishment dividing the occupations therein carried on into classes and sub-classes, having in mind always the movements performed and the machines handled rather than the product as a base for subdivision. In a given shop it might be found that six men stand up and five men remain seated while operating machines, seven men walk about, eight men work at benches either standing or seated. The surveyor will note whether the shop is noisy, whether the air is good, in respect of each kind of work whether good eyesight is required, whether the tools or materials which have to be used are heavy or otherwise. These and numerous other details when tabulated opposite the name of the occupation under the heading of the firm name give the vocational officer the opportunity of

judging whether or not certain men having specific disabilities could be trained for each individual occupation. Comment is made by the surveyor on the class of wages paid for each occupation and upon the general employment conditions. The candidate for training is made acquainted with these conditions before he is asked to accept any given course.

It has been found that most of the courses of training average from five to eight or nine months, while in some cases a comparatively few weeks suffice. When a certain amount of preliminary knowledge of tools, etc., is acquired, the Department's schools and courses are utilized during the earlier portion of the man's training. The disabled man



Learning to be Wheel-truers

These are one-armed men and they are at work in the vocational training plant established for disabled soldiers by the Russell Motor Car Co., Toronto.

Men learning the occupation taught in this training school are guaranteed employment by the Russell Co.



Weaving on a Bed Loom

This is one of the ward occupations taught to hospital patients during their convalescent period for therapeutic reasons

then enters the factory and continues his training with such tools or machine as he will subsequently be called upon to operate in employment. During the period of training the manufacturer agrees not to exploit the veteran but to give him the best experience and concentrated training during the few months of his apprenticeship. Inspectors go around to the factories where men are being trained in order to see that all is satisfactory, that the manufacturers are keeping their part of the bargain, and that the men are making the most of their opportunities. Even after employment has been found for the ex-soldier the Department keeps in touch with him to see that success follows the efforts which have been made to set him towards earning a livelihood.

Condensed List of Occupations

One important result of surveying the factories for opportunities to train men has been a broadening of the list of occupations which disabled men are being taught. It was feared that if men were trained for only those occupations which could be taught in schools, too many disabled men would be directed into certain classes of work. Thus at one time over a half of the men under re-education were going in for clerical work or automobile mechanics. This has now been changed and the men are warned in regard to very popular occupations that many other disabled men have preceded them into it and they will be subjected to keen competition by disabled men with quite as much claim on the public for employment as they have themselves. It is seldom that a man fails to see the point. Under present conditions men are being trained for over two hundred occupations, a partial list of which appeared in the Department's May Bulletin.

Industrial re-education does not begin until the disabled soldier has been discharged from the army; that is, until his disabilities have been overcome as far as medical science is capable of overcoming them. The interviewing, surveying

and boarding are done as far as possible before discharge, so that the convalescent soldier is interested in his own future and comes to the Re-Establishment Department primed with enthusiasm for his industrial future.

During convalescence, however, opportunities of vocational training are held out to all returned soldiers. While definite results are not guaranteed and no special effort is made to train men for new occupations, much valuable work is done in classes which are conducted largely for therapeutic reasons. About a dozen or more subjects are being taught in classes or shops maintained in connection with all convalescent hospitals. The idle life of a hospital is to some extent offset by the employment thus given. Advantages accrue to the man, not only in the way of speeding his recovery, but in the intrinsic value of the things learned. Thus a former shop clerk may take up book-keeping and qualify for advancement in the class of business where he is accustomed to be employed. A laborer may take up rough carpentry or something about gas or steam engineering. The ambitious man can learn a great deal in the three or four months of his convalescence. Men who are headed in the direction of a course in industrial re-education also find that the preliminary training given during convalescence hardens their muscles and gradually fits them for the full day's work which they have to undertake not only during employment but in the apprenticeship or training time.

Ward Occupations Introduced

In the early convalescent period several ward occupations have been used in order that the period of depression and idleness may be reduced to a minimum. While still in bed a man may weave scarfs on a tiny hand loom placed across his bed, or make baskets out of reed or raffia, or embroider centre-pieces. Instructors in these arts are employed by the Department to go into the hospitals and induce the ward cases to take up such work. Much is learned about the



Learning to be a Piano-tuner

A former carpenter who had his second, third and fourth finger mutilated at Vimy Ridge was trained for five months by the Mason & Risch Piano Co., Toronto

character and ability of men during this preliminary vocational training, so that when the time comes to recommend a course of industrial re-education (if such should be necessary), the Vocational Officer and the Disabled Soldiers' Training Board have something tangible to work on.

Work Done in Sanatoria

The Department of Soldiers' Civil Re-Establishment has other duties besides vocational training. It has the medical care of all cases requiring long or permanent institutional care. For instance, tuberculous cases are discharged from the army and cared for in sanatoria conducted by the Invalided Soldiers' Commission. Vocational training is carried on in these sanatoria in order to restore tuberculous men to health as quickly as possible and to encourage them to carry on in employment after their discharge. Very few of the army tuberculous men fail to recover and go out into civil life as self-supporting citizens, thanks to the progress made in treat-

the centres of large population. The manufacture and issuing of artificial limbs and other such appliances required for disabled men is another duty of the Re-Establishment Department. The Department established its own factory and operates branches independently in all the large centres of population to do fitting and repairing.

It is especially in the industrial re-education that manufacturers are interested and their co-operation is urgently required. The value of this important work of conservation has become at once apparent to employers who have had the case properly laid before them. Some few instances of exploiting the labor of men who are supposed to be receiving training have occurred, but such men have instantly been withdrawn from the factory in question and no further assistance in that direction has been sought. On the other hand the Department takes great pains to recommend the right man for the right job in its training work and there have been very few instances of malingering. Inasmuch as



Improving their General Education

Convalescent soldiers improving their spare time in the hospital by availing themselves of the opportunities offered by the Department of Soldiers' Civil Re-Establishment to improve their general education. This is one branch of occupational therapy

ing this disease and also very largely to the vocational training policy which greatly accustoms patients to a certain amount of exercise and work while still taking the cure.

Permanent soldiers' homes, if any are required, will be conducted by the Department of Soldiers' Civil Re-Establishment. At present there is only one such home and it is not expected that more than three or four of thirty or forty beds each will be required. This is one of the fruits of industrial re-education.

Free Medical Treatment

Men who suffer recurrence of their war disabilities are entitled to free medical treatment and medical care for the rest of their lives. To administer this the Department has Assistant Medical Directors in each Province and is making arrangements with the hospitals for the care of its patients. It is also proposed that dispensaries will be established at

the man is on pay and allowances from the Department he can easily be penalized for such conduct and the Vocational Officers have power to do so.

Large Numbers Concerned

As mentioned before, courses have been approved for 5,045 men, and of these 1,990 are at present receiving their training. On August 1st the number of men who had received their training and gone into employment was 1,081.

Fewer than five per cent. of the men in Canada who have been offered courses of training have refused them, and in some cases this was because they were able to go into a line of work for which they did not require training. A few over 200 have begun courses of training and left them before the course was completed. Of these there were also some who found they were able to take employment in other lines without the training to which they were entitled.

Psychological Tests in Employing Men

No Greater Waste than that Occasioned by our Method of Selecting Employees
—The “Hire and Fire” Policy Costs Canada \$100,000,000 Annually— If Help
were Efficient, Less Space and Machinery Would be Needed, and there Would
be a Further Saving by Making a Success Out of the Unsuccessful Man

By GEORGE B. CUTTEN

President, Acadia University

SUCCESS in industry is spelled with four M's. They are Money, Materials, Machinery, and Men, and they must all be present in sufficient quantity and quality. Capital is plentiful; raw materials are obtainable in the open market under normal conditions; good machinery is not scarce and better is being invented; labor is the uncertain factor, and is becoming more uncertain as the days go by. The difference in factories and in profits depends upon the available supply of the labor and the use that is made of it. Success to-day, more than ever before, must be secured by using men in their proper places.

One business man has gone so far as to say that of any ten jobs probably only one is filled by a man who ought to be in it, and that of any ten men probably only one is doing the work for which he is best fitted. Certain it is that we all know talented people who are failures at their present occupations, and we have felt that these persons would have been great successes if they had only found their proper work. Would it not be more correct to say that there are no failures, but there are many people who are trying to do work for which they are not naturally adapted? Look at the people who have lived most of their lives as failures, and then accidentally finding their proper places have filled their niches in the hall of genius. Lincoln was a farmer, lumberman, rail-splitter, flat-boatman, teacher, postmaster, military captain, store-keeper, and surveyor, and then debated between blacksmithing and law. He was a perpetual failure until he found his proper task; only then to become one of America's greatest.

We have recognized that dumb persons cannot become preachers, and legless men cannot be professional dancers, but apart from a few such obvious cases as these, little care has been taken to adapt a person to the occupation for which he is fitted, and we must further recognize that mental fitness is fully as important as is the physical. If there is any truth in the old idea of a “call,” it is that all men are called to do what they can do

best, it is the call of the fitness of the organism. In these days of conservation there is probably no greater waste than that occasioned by our method of selecting employees. The “hire and fire” policy costs Canada \$100,000,000 annually. That amount would look well on the profit side of the ledger, and it might be there. Not only should we be

free of the cost of training, which runs between \$10.00 and \$1,000.00 per person, but if help were efficient we should need much less space and machinery, and there would be a further saving by making a success out of the unsuccessful man. In some factories the annual labor turnover is as high as 1,000 per cent., while the necessary changes on account of death, sickness, discharge and other causes should not run above 15 per cent. or 20 per cent. That the labor turnover can be reduced is shown by some recent examples. From October, 1912, to October, 1913, the Ford Motor Company had a turnover of 400 per cent. The next year, through the influence of profit-sharing, this was reduced to 23 per cent. This resulted in an increase of working efficiency of 44 per cent. and gave a return of 24 per cent. on the profit-sharing bonus.

The recent attempts at scientific management have led the manufacturer to see that his great task is in con-

nection with labor, and he has tried numerous artificial schemes to produce results. He has finally come to the conclusion that the hope of greatest results rests in having men fitted for their tasks, and the tasks to the men.

To accomplish these results he has been driven to the psychologist. This is a reversal of form, for America has had a lot of fun laughing at its college professors, while Germany was using hers in industry. Given the problem, the professor has wrestled with it patiently and scientifically and not without results. In connection with some large industries, professional vocational psychologists are now employed to select men for different employments, and the school boards of some large cities are endeavoring to indicate to young men and young women the particular work for which each is fitted. The manufacturer has the easier task, for at any time

LABOR unrest, so prominent at the present time, demands our serious consideration. Quite a few concerns in the United States and Canada are endeavouring to minimize the discontent among their employees by introducing various schemes such as co-operative profit-sharing, welfare work, bonus systems, etc., all of which are commendable. It is the opinion of some students, however, that considerable of the unrest is caused by misplacing men in industry and in this connection INDUSTRIAL CANADA has secured the following article from Dr. Cutten. During the past year a course on psychological tests was instituted at Acadia College, taking in the vocational as well as the educational application. Although the course was a new one it was very successful. Manufacturers who may desire to obtain more definite particulars from Dr. Cutten with reference to the partial application of psychology in placing employees in their shops should write to him direct, and we have no doubt he would be glad to give the desired information.—EDITOR.

he has one job and chooses the person among all the applicants who is best fitted to accomplish the work, while the school psychologist has before him all the occupations in the world, and must choose the one for which this boy or girl is best fitted. Eventually the manufacturer will cease his work, for it will have been already done, when all boys and girls are scientifically tested. At present, however, every industry should have its vocational psychologist.

It is evident that certain unskilled occupations need no test except that of industriousness, but even laborers are, and may be still more specialized. It is also true that extreme variations may not be subjects for vocational tests, for the very fit find employment, and the very unfit are always excluded, but vocational guidance may show the very unfit a task for which he may become fit. It is also to be noted that extreme energy, industry, and such qualities as honesty may lead the unfit to fair accomplishment, while ill-health or other disabilities may cause the fit to do poor work. So small a proportion of workers comes under these classes that the field of psychological tests still has the principal responsibility; and even if they have only the partial success which the present development of the science yields, it is a great help to employers.

When the United States declared war the services of all the experimental psychologists in the country were commandeered, and the men in the army were put through psychological tests to eliminate the nervously and mentally unfit; to choose those best fitted by general intelligence for promotion, and to select men for particular occupations. Through the results obtained in this series of tests much may be expected. At the present stage of development, tests for general intelligence are so reliable that we may say that these can be standardized and used; the psychographs for

some kinds of employment are also fairly well developed and fairly reliable; others are being continually worked out.

Looking to the present and future industrial condition of Canada, psychological tests cannot be neglected. If men are doing work for which they are best fitted there will be less unrest. They will be happier in their work, their wages will be higher, for they will be more efficient, and the employer's interests will be better served in every way. With the great shortage of labor now, we should make the best use of what we have, which can only be accomplished by having every man in the place in which he can do the best and most work. When the men return from overseas and the severe industrial competition ensues, which seems inevitable, every man will then be needed where he fits. In the case of those incapacitated for former occupation by wounds, disease or military training, industrial training should not be wasted, but men should be tested so that they might be prepared for their true work. From every quarter the call comes loudly to the manufacturer to take up and to develop this new work and to call for the assistance of the trained psychologist to work out for him vocational tests. It is interesting to note that a certain association of business men in the United States is making an annual grant of \$15,000 a year to the Carnegie Institute of Technology, Pittsburg, to enable its professors to work out a psychograph for testing salesmen.

These tests, which take but a few minutes, save the manufacturer the waste of time and money in training persons who will be incompetent when trained, save him the expense of extra space and machinery, give him efficient workmen, save him the cost of the excessive annual labor turnover, and save him from the unrest which is the threatening and uncertain feature of industry to-day. This saving divided between labor and capital will make both happier.

The Progress of Industrial Reconstruction

More Activities of the Canadian Industrial Reconstruction Association—Meeting Held in Kitchener Last Month—Officers of the Association are on a Visit to Western Canada—Letters from Correspondents Indicate that Relations Between Manufacturers and Farmers are being Studied

By SIR JOHN WILLISON

President, Canadian Industrial Reconstruction Association

NOTWITHSTANDING the general suspension of business during July and August, the Canadian Industrial Reconstruction Association has been comparatively active throughout the summer. This was the more necessary because it is only completing its staff and organization. During August, the President; Mr. J. F. Ellis, Chairman of the Central District Committee; Mr. W. K. George of the Executive Committee and Major A. N. Worthington, Secretary visited Kitchener to meet the local manufacturers. This meeting, which was well attended, took the form of a luncheon, over which Mr. E. C. Kabel presided. Speeches were made by the President, Mr. George and Mr. Ellis, in explanation of the aims and objects of the Association, and much of what was said seemed to command the sympathy and approval of the meeting. Indeed in Galt, Preston, Hespeler, Kitchener and Waterloo, which represent perhaps the most active industrial district in Canada, the Association is being generously supported and its programme apparently is regarded with much favor.

On September 1, the President, Mr. George and Major Worthington left for the West, where they will spend a month in the general interest of the Association. At Winnipeg a

Western District Committee will be created which, with the Central Committee at Toronto and the Eastern Committee at Montreal, will complete the organization of the Association as now contemplated. At Winnipeg, in addition to a meeting to be held in connection with the organization of the Western Committee, the President will address the Canadian Club, and he will also speak, if he is able to accept the invitations which have been received, at Regina, Calgary, Lethbridge, Vancouver and other places. Most of the addresses will be delivered before Canadian Clubs, although at Vancouver he will speak to a general meeting of representatives of the industrial and commercial interests. It is expected that Mr. George will also speak at various meetings, as he will assist in organizing at Winnipeg and in such other work for the Association as becomes necessary. In his Western addresses the President will argue chiefly for adequate dealing with the inevitable problem of reconstruction, and will insist upon the necessity of revising old political programmes in order to meet the situation which years of war have produced. He will deal also with the relations between East and West, emphasizing national as against sectional interests, while neither contending nor implying that sectional feeling is stronger in the

newer than it is in the older Provinces. His general contention is that unity between East and West, between industry and agriculture, between capital and labor, are vitally necessary if we are to pass successfully through the era of reconstruction and that this unity can be achieved if the people fully understand the situation with which they must deal, and if there is adequate vision and courage in the plans of financial and industrial leaders and in the policies of governments.

A Western Opinion on the Tariff

In a private letter received at the offices of the Reconstruction Association, a Western correspondent, who has never had much sympathy with Eastern Protectionists, declares that the more he studies the situation in Canada the more clearly he is convinced that the bulk of our raw material should be manufactured in Canada, and that it would be extreme folly to do anything to break down our system of industry. "On the other hand all producing for export must have the cheapest tools of production available. There are many people in the West who would smash things, but I believe that an entente can be established with diplomacy. The United States after the war will have such efficiency that it will be hard to compete with them in their quantity of production but our Canadian manufacturers must as our farmers will have to. The manufacturers cannot if they lose the monopoly of our home market. But they must not take advantage of the tariff for extortion as they have been doing. The farmers will not stand for it. The United States has the highest tariff and in most cases the cheapest goods."

One doubts if Eastern manufacturers have practised extortion, but probably such an opinion is held by many Western people, and only good can result from the interchange of views which is now going on and the conferences which are suggested with Western grain growers, in order that the true position of Canadian industries may be understood, and that there may be equal understanding of the attitude of Western producers. It is not to be expected that Western producers will submit to extortion, while on the other hand there is reason to believe that the leaders of Western agriculture have no desire for legislative action which will injure Canadian labor or deprive Canadian manufacturers of necessary advantage in home markets if it is made clear that such industries are efficient and the prices of their products reasonable.

Correspondent Advocates More Publicity

Another letter received by a member of the General Committee of the Association may be worth quoting. "It would appear to me that the manufacturing industries in Canada are too modest. What I mean by this is that 90 per cent. of the laymen in Western Canada have little or no idea as to what the manufacturing industries of this country are paying in the way of taxes, or in any wise contributing to the revenue of the country. Many people are under the impression that they are doing nothing, other than reaping enormous profits. I believe a great deal of the prejudiced feeling toward the manufacturing interests of Canada could be eliminated if a systematic process of education were started through the press, or some other means, acquainting the public of the share the manufacturing interests are bearing at the present time, and I am firmly of the opinion that if the Manufacturers Association would start, in some indirect way, a propaganda educating and acquainting the people with what the capitalists, and, more especially, the manufacturers are doing, a great good would result in the interests of capital."

Finally, here is an interesting and suggestive letter from an Ontario farmer. He says: "Would you be so kind as to give me your opinion as a manufacturer, on a scheme to bring

agriculture and manufacturing into closer touch in Ontario. It seems that there is need of some sort of a bridge over the chasm of misunderstanding which exists generally between agriculture and manufacturing, and I do not say that the chasm exists except in the minds of some of our farmers. Allowing that agriculturists are chiefly to blame for the condition of affairs, does the manufacturer not feel inclined to help them out rather than to allow them to "boil in their own broth"? I think he does and hence this letter to you. Would it be feasible for manufacturers employing upwards of 100 hands to designate certain farms as their sources of supply for such things as could be conveniently handled in the way of foodstuffs, such as potatoes, turnips, eggs, fruit, etc. The idea in my mind is this: Most farmers grow their crops hit or miss, hoping to dispose of them at some time and at least get back the money they have expended on them. I never heard of any ordinary crop being grown "on order." Extraordinary crops such as sugar beets and grain for seed, and flax are contracted for very often, and the results are generally very satisfactory for both the purchaser and producer. If a manufacturer wished to put this suggestion of mine into practice he would locate a pleasantly situated farm not too far from his factory. He would suggest to the farmer that he would be willing to undertake the disposal of certain produce at current prices less handling, and would finally make an arrangement that next season the farmer should supply the company with produce which would be turned over to the employees who wished to take it at the current prices. We will say that the manufacturer is interested in the scheme. He goes out to see the crop produced from the first stages to the gathering. He inspires confidence, and when the farmer needs extra help for haying or harvest he feels that he can ask the manufacturer to let him have a man or two to help him out. Some of the factory employees might find the farm a good place to spend their vacations and they might at the same time enjoy being useful in return for such fresh butter, milk and eggs as they would need to make camping out successful. This feature would bring an element of sociability into the life of the farmer which is in many cases altogether lacking now, and the absence of which makes farm life so dull and uninteresting to many farmers and their families—especially the families. The interest taken by the manufacturer would result in a general smartening up of the appearance of the place and after a time he could make suggestions for bringing the general appearance of the place into line with his ideas of neatness and efficiency. He could help also in suggestions regarding such things as stock-taking and farm accounting, which more than anything else would help to convert farming, as it is to-day, into something more than a hit and miss proposition. I know this scheme may be thought visionary at first glance, but some start must be made to bring agriculturists and manufacturers together, and no plan has ever been suggested as a basis to start on. The average farmer *cannot leave his farm*, and there are more average farmers than any other kind, which sounds an Irishism. The farmers who go to Toronto and hold meetings don't represent the rank and file—only the rank. I haven't left my farm overnight for five years, which is a new experience in my life, but I have learned to know and to appreciate the average farmer as I could have done in no other way."

Whether or not the plan suggested by the writer can be wisely or generally adopted by manufacturers, there could be no clearer illustration of the natural relation between industry and agriculture and the value of the home market. Nor is it so certain that the farmer's proposal is impracticable. There is all to be said for any development which will guarantee the local farmers a steady and profitable home market for their products.

Ontario Fire Prevention League Formed

Policy of the Association Receives Support at a Conference Held Last Month at the Parliament Buildings in Toronto to Consider Ways and Means of Reducing the Fire Waste in Ontario—Series of Recommendations Were Approved by Those Present

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By H. MACDONALD

Assistant General Secretary, Canadian Manufacturers Association

PROBABLY the subject, which aroused most general interest at the annual convention in Montreal in June last was the enormous proportions of our fire waste in Canada. A strongly-worded resolution was addressed to the federal and provincial governments demanding the enactment of uniform laws to enforce improved conditions throughout the entire country.

It is encouraging to find that steps are being taken to arouse the public to their collective responsibility; to urge the adoption of restrictive legislation in regard to all matters pertaining to loss by fire and to penalize in every possible way the irresponsibility and negligence which are the principal causes of fire waste in Canada. The task presents a field for the interest and activity of Associations of every description, working with the governments as the sources of power, the insurance companies as the sources of facts relative to fire waste, and the press as the source of public information.

Our Insurance Committee has rendered an invaluable aid in invoking the services of the Dominion Commission of Conservation, so specially well fitted by the excellence of its organization to investigate the problem.

A Tremendous Waste

Fire waste has reached such alarming proportions in Canada that it constitutes one of the most vital problems in any national plan for the conservation of our national wealth and imperatively demands the adoption of effective measures for its control. Since Confederation the Dominion of Canada has suffered direct fire loss to the extent of over \$350,000,000, exclusive of forest fires, and in that time \$150,000,000 has been spent in maintaining fire protection services. About \$197,000,000 over and above the sums returned for loss has been paid; thus during the last half-century the ravages of fire have taxed the people of Canada to the extent of nearly \$700,000,000.

A representative gathering, including members of the Legislative Assembly, fire-fighters, insurance men, manufacturers and representatives of the various farmers' and women's organizations of the Province of Ontario, met at the Parliament Buildings in Toronto on the 30th ultimo and formed the Ontario Fire Prevention League in affiliation with the Ontario Fire Marshal's office, with the object of reducing the appalling fire loss of the Province.

Sir William Hearst, in addressing the Conference, stated that in the Province of Ontario the loss annually aggregated approximately \$12,000,000 and it was increasing. There were 444 lightning fires during these months with a total loss of \$220,878, and of this number 442 occurred in buildings not rodded. There was a loss of \$536,820 in the same period due to defective electric wiring and subsidiary causes.

The Conference, which was under the presidency of Sir John Willison, approved of the following recommendations:

The adoption by municipalities of a standard building code so that fire-resistive building construction may be encouraged; the use of inflammable roof coverings prohibited;

adequate exit facilities from buildings secured, and interiors so designed and fire-stopped as to make easy the extinguishment of fires therein.

The adoption by the Province of a minimum building code for the protection of hospitals, schools, asylums and similar institutions, outside the city limits and in small communities in which the establishment and enforcement of a building code is impracticable.

Other Recommendations.

The adoption by municipalities of the "Suggested By-laws," published by the Fire Marshal's Office, providing for the systematic inspection of all buildings, for cleanliness, the removal of rubbish, the maintenance of proper exits, fire-fighting apparatus and other protective devices.

Application of the principle of common law of personal liability where a fire originates in the premises occupied by any person as a result of his criminal intent, design or wilful negligence.

Wider general use of automatic sprinkler and the more general adoption of the fire division wall.

Careful study of water supplies, fire department efficiency, and possibility of co-operation among neighboring cities and towns.

Universal adoption of the safety match, and legislation prohibiting smoking in all parts of factories, industrial and mercantile buildings.

Regulation of transportation, storage and use of inflammable liquids and explosives.

Education of the public in careful habits regarding the use of fire and prohibition of fireworks except by special license.

Statutory obligation upon every municipality to equip and maintain a fire brigade and provide a water supply.

Equipment of barns containing farm produce with standard lightning rods.

Inspection of all electric wiring throughout the Province.

Officers and Objects

While the objects of the League will be educational, it will have special regard to the need for legislative control of fire waste in Canada. The only possible solution of the national fire waste problem lies in the adoption of compulsory measures which, by reducing to a minimum the fire hazards in all communities and properties, will prevent the occurrence of fires.

The following officers were elected:

Hon. President—Sir William Hearst, Prime Minister of Ontario.

President—Arthur Hewitt, Manager Consumers' Gas Co.

First Vice-President—H. G. Waddie, Hamilton.

Second Vice-President—Mrs. L. A. Hamilton, Toronto.

Secretary-Treasurer—Geo. F. Lewis, Fire Marshal's Office.

The Insurance Committee of the C.M.A. was represented by W. S. Shapley, Chairman, and H. Macdonald, Assistant General Secretary.

An illuminating address was delivered by Hon. T. Alfred Fleming, State Fire Marshal of Ohio, on the havoc wrought by the enemy agents in the United States in setting fire to munition works, airplane factories and other important works.

Activities of Maritime Provinces Branch

A Maritime Canned Fish Section of the Canadian Manufacturers Association was Formed During August—Position of the Lobster Canning Industry Discussed at a Conference held in Halifax—Research Guild Suggested by Dr. A. B. Macallum

By H. R. THOMPSON

Assistant Secretary, Maritime Provinces Branch

THE lobster industry has been receiving a good deal of attention of late, and no little criticism, at the hands of the Federal Government officials and others indirectly interested. Statistics have been quoted in many newspapers in an endeavor to prove that this industry is nearing depletion. The Commission of Conservation was of the opinion that extreme measures would have to be adopted immediately if the industry was to be saved. They suggested closing it down completely for three years.

Before taking any decided action the Government officials very wisely called a meeting of those engaged in lobster fishing and packing to discuss the situation. This meeting was held in the Board of Trade rooms at Halifax, on the afternoon of August the 8th.

It was considered desirable to have the lobster fishers and canners together before meeting the Government officials in order that some definite plan of action could be outlined. A meeting was, therefore, called on the afternoon of the 7th inst. and continued during the evening. After exhaustive discussion some conclusions were arrived at and a resolution committee appointed to embody these conclusions in Resolutions to be presented to the Government officials at the meeting to be held on the following day. These resolutions read as follows:

Resolution re Lobster Industry

"Whereas, owing to the valuable research work done by the Biological Board of Canada and to representations made by them, it has been found wise to call together those interested in the Lobster Industry of the Maritime Provinces, who, upon serious deliberation have found as follows; that there is no serious depletion of the industry, and that if the Department controlling the Fisheries of Canada would properly enforce the regulations regarding the *Berried Lobster* and the established *Close Seasons*, the industry would be self-maintaining, and

"Whereas, the number of people depending upon the Lobster production and packing constitute a very large proportion of the population along the Atlantic Coast, it is necessary to protect their means of livelihood as well as the vested rights of the packers and fishermen, and

"Whereas, in the opinion of those convened, a serious disarrangement of existing conditions in the present strenuous times would cause much hardship and suffering.

"Therefore be it resolved, that as little interference as possible be made with the present fishing seasons, and that no further restrictions be placed upon the industry beyond that of equalizing the open seasons in all districts as nearly as possible, giving to each district a period of two months as follows, with the exception of the west coast of Nova Scotia, where owing to the live lobster trade the season might be made three months, viz., March 1st to June 1st.

District 4 and 5. Open season to be from March 1st to May 31st, inclusive.

District 6. The portion from Halifax Harbor to Cape Michaud—the open season to be from April 20th to June 20th, inclusive.

District 6. That portion from Cape Michaud to Cape North—the open season to be from May 15th to July 15th, inclusive.

District .. That district from Cape North, including the Gulf of St. Lawrence, excepting districts 8 and 9, the open season to be from May 1st to June 30th, inclusive.

District 8. The open season to remain as at present, i.e., May 1st to July 20th, inclusive.

District 9. The open season to be from Aug. 1st to Sept. 30th, inclusive.

"And that owing to past experience with a size limit that the enforcement is so impracticable that it should not receive consideration.

"Whereas, Regulations governing the lobster fishery have been in the forms of Order-in-Council, it is strongly urged that these or any future legislation affecting the lobster industry be by Statutory enactment, and

"Whereas, political interference in the past has hindered the enforcement of fishery regulations, it is felt that the best method of conserving the lobster industry in all its branches would be by the appointment of an independent Commission composed of Maritime Province men, free from political influence to administer all details, including a scientific study of the habits of the lobster, with a view of learning the annual propagation and the quantities that might be caught without imperilling the industry."

Standard Sized Cans

"Whereas, an Act known as the 'Meat and Canned Foods Act,' has been passed to come into effect upon the 15th December next, which calls for certain net drained weights of lobster meat in the various sizes of cans used, which cannot be put in the standard sized cans now being used by the trade.

"Therefore, be it resolved that the said Act be amended to read:

That the 1 lb. standard can contain 12 oz. meat.			
" ¾ lb.	"	"	9 oz.
" ½ lb.	"	"	6 oz.
" ¼ lb.	"	"	3 oz.

this being the recognized standard weight for Canned Lobsters throughout the entire Canned Lobster world."

Permanent Organization Formed

The need of a permanent organization to look after the interests of the fish canners was also discussed, and it was decided to call a meeting on the evening of the 8th inst. to further consider the matter. The meeting was presided over by Mr. John A. Neville, of the Neville Canneries, Ltd., Halifax. After illustrating what could be accomplished by the fish canners getting together occasionally to discuss the welfare of their mutual interests, Mr. Neville requested Mr. H. R. Thompson, Secretary of the Maritime Branch, Canadian Manufacturers' Association, to explain the organization and work of the C.M.A. and also in what way the fish canners could organize as a "Section" or "Branch" of that Association in order that they might be in a position to receive the benefit of the prestige of that Association and the services of its official staff. After this explanation was given it was decided to organize a "Maritime Canned Fish Section" under the C.M.A. The following officers were then appointed: Mr. F. Magee, Chairman; Mr. R. H. Williams, Vice-Chairman; Mr. H. R. Thompson, Secretary. These with three directors, one

from each Province, namely, Mr. W. F. Tidmarsh, Prince Edward Island; Mr. R. O'Leary, New Brunswick; Mr. John A. Neville, Nova Scotia, to act as an Executive Committee.

The Secretary presented a tentative set of By-Laws which he had prepared in anticipation of such an organization being formed, and these were adopted after some slight changes were made.

Research Guild Suggested

During the conference of fish canners, Dr. A. B. Macallum, Chairman of the Advisory Research Council, took the opportunity to discuss the question of organizing a research guild in connection with the fish canning industry. After explaining what might be accomplished by such an organization, he suggested that a committee be appointed to further consider the matter. The following committee was then appointed: Hon. J. McLean, Chairman, Souris, P.E.I.; W. F. Tidmarsh, Charlottetown, P.E.I.; A. P. Prowse, Murray Harbor, P.E.I.; F. Magee, Port Elgin, N.B.; Emile Paturel, Shediac, N.B.; W. S. Loggie, Chatham, N.B.; R. O'Leary, Richibucto, N.B.; Mr. Hodge, Lockeport, N.S.; E. K. Spinney, M.P., Yarmouth, N.S.; A. H. Whitman, Halifax, N.S.; G. S. Lee, Halifax, N.S.; R. H. Williams, Halifax, N.S.; J. A. Neville, Halifax, N.S.; H. Shortt, Digby, N.S.; S. Y. Wilson, Halifax, N.S.; Arthur Boutilier, Halifax, N.S.

A meeting of this committee is to be called during the month of October, and in the meantime Dr. Macallum will furnish the members with literature explaining more fully the organization and work of "Research Guilds." Those who are not acquainted with lobster canning might be interested to learn that at present not more than one-third of the

lobster is actually utilized in canning. The balance practically goes to waste. The utilization of this waste is one of the problems which might be solved by scientific research.

Uniformity in Provincial Legislation

At the last session of the Legislative Assembly of New Brunswick, the Bill which was drafted by the Canadian Bar Association in an endeavor to promote uniformity in legislation was passed, and the Commissioners under the provisions of the Act have been appointed, namely: Mariner G. Teed, K.C., William B. Wallace, K.C. and J. P. D. Lewin, Barrister.

N.B. Workmen's Compensation Act

The administration of this act requires a board of three. The announcement is made that Mr. John A. Sinclair, of Messrs. McRae, Sinclair & McRae, is to be Chairman. Mr. J. L. Sugrue, President of the Trades and Labor Council, is to be the representative of labor. The third member is yet to be named.

N.B. Vocational Education Act

Under the provisions of this Act, which was passed at the last session of the Legislature, a Provincial Board is required to administer it. This committee has been appointed and the members are as follows: Mr. F. Magee, M.L.A., Chairman; Dr. W. S. Carter, Supt. of Education; Dr. Bridges, Supt. of Normal School; Mr. W. R. Reek, Secretary of Agriculture; Mr. R. P. Stevens, Director Elementary Education; Rev. Father Tessier, St. Joseph's College; Mr. W. H. Maxwell.

August Activities of the Montreal Branch

By W. P. HUGHES

Assistant Secretary, Montreal Branch

OWING to the fact that August is a holiday month there was no meeting of the Branch Executive Committee, although several sections held meetings in the Branch Office during the month.

Ten firms have applied for membership in the Association during the month, which applications will be submitted at the next meeting of the Executive Committee to be held in September.

The Montreal Branch has had the benefit of visits by Mr. J. R. K. Bristol, Manager of the Association Tariff Department, and Mr. S. B. Brown of the Transportation Department.

Mr. Bristol was extremely busy serving members who had knotty customs matters to straighten out. This aspect of the Branch's activity is most important, and Mr. Bristol finds when he comes to Montreal that an increasing number of members are on hand to seek his advice and assistance.

The Branch Office has obtained through Mr. Bristol complete files of the Canadian Government Trade and Commerce Bulletins and Memoranda dealing with questions of import and export restrictions, licenses, etc., etc. These have been in constant use by the Secretary in supplying information to members as to the regulations, forms and methods of application for licenses, priority certificates, etc.

While Mr. Brown of the Transportation Department was in Montreal, the Branch freight tariffs were checked and preparation made for serving the Branch members in the supply of information concerning these matters, even more fully than in the past. Mr. J. E. Walsh, Manager of the Department, will alternate with Mr. Brown in visiting Montreal fortnightly during the coming months.

A special transportation committee consisting of Messrs. A. D. Huff, B. W. Coghlin, A. H. Brittain, R. E. Jamieson, R. H. McMaster and C. Howard Smith, has been appointed to deal with local transportation matters. Most important work will be taken up by this committee during the coming months.

The Branch was most fortunate in securing Mr. G. H. Duggan, of the Dominion Bridge Co., Ltd., Montreal, to act as a member of the Federal Board of Appeal in labor disputes. Mr. Duggan has for a long time been intensely interested in labor questions and is eminently qualified to act in this most important capacity.

The Montreal Branch of the Graphic Arts Section has continued its activities during the summer months, holding their usual dinner and business meetings each month at the Engineers' Club. They have succeeded in adding new members at each of the last three meetings, and have at the present time 29 members enrolled, with good prospects for several more in the near future.

The Manager of the Section is carrying on the work of installation and of auditing the Standard Cost System adopted by the United Typothetae of America and approved of by the Federal Trade Commission of the United States.

The work of this Section is expanding and increasing in importance from month to month.

Mr. Wm. Rutherford, ex-chairman of the Montreal Branch, captained a team representing the manufacturers in the recent Quebec Navy League Campaign for members. The team was successful in turning in over 3,000 members from the establishments of our members. This represents in money about \$5,000 in fees added to the funds of the Navy League.

Industrial Warfare

More than a Desire to Win is Necessary for Success in the Struggle for the Increased Business Demanded by Canada's Growing Debt

The Fifth Instalment of a Series of Modern Business Problems and Their Solution

By ROBERT ARKELL

Of Thorne, Mulholland, Howson and McPherson, Industrial Advisors, Toronto

THE most conservative of our industrial, financial, and political leaders support the view that no country's opportunities were ever greater than ours. There remains, however, a very important question to be satisfactorily answered: What steps are necessary to secure a full measure of success? One prominent manufacturer has received, without any effort, so many enquiries and orders from South Africa, Australia, West Indies, etc., that his plant could be kept busy on this work alone. The result is that he thinks a ready-made export business has been dropped into his lap. If all manufacturers in a similar mood would only realize that the world, at the present time, has an insatiable appetite for all kinds of commodities and that buyers are searching the four corners of the globe for suitable wares, they would see the quicksand upon which they are building their hopes.

Getting business to-day and holding it after the war are two totally different matters. It is not reasonable to expect that practically unsolicited orders will reach us when England, France and other world traders can send their star salesmen to secure this business, as they did in pre-war days. Nor can we, even with the assistance of specially trained travelling representatives, secure a share of this business unless we can meet our competitors on equal terms.

European Standards Lower

In a recent issue of the *Saturday Evening Post* a prominent captain of industry, who is a close student of after-the-war problems, stated that "labor standards have always been lower in European countries than here and will continue relatively lower after the war. This is a disadvantage that we have to face. When the war is over, Europe must sell vast quantities of goods to regain its financial solvency. How then can we compete, with our raw materials but little, if any, cheaper, our cost of capital practically the same and our labor costs much higher? These are the only elements that go into production except one other—efficiency of management."

Never was the question so ably answered. Efficiency of management is our sole salvation. But would an "efficient management" seek export trade while the domestic market is only partly developed? Is it efficient from a national point of view, to ship, say, a cargo of boots and shoes to South Africa and import the same quantity or more of the same articles from another country? A true and lasting success can only be had by dominating our own markets before we seek foreign trade. To what extent we did this it is only necessary to glance at a summary of our exports and imports previous to August, 1914. The unthinking optimists will insist that "the old order of things has changed" but such logic is not based upon facts. This country has achieved a distinguished reputation for its war efforts but sentiment alone will not sell our goods abroad. We must be in a position

to give as good value as any other nation and this can only be accomplished by the practice of the soundest business principles.

Service to the Customer

Study your market first. Find out what the public really wants and give it to them. Be honest in your decisions. Do not take the path of least resistance. More than one manufacturer has wasted a lifetime trying to force the consumer to cultivate a desire for his product. It is not very pleasant for a practical man to hear his trade clamoring for an article of which he himself disapproves, but he must remember his is only one view against thousands, and while the latter may not possess a technical knowledge of his product they do know that they do not have to take something they do not want. Every successful business is founded upon "service to the customer" which, in its final analysis means complete satisfaction.

Not long ago, a struggling clothing manufacturer insisted upon slightly exaggerating every style—"advanced styles," he called them—and after his salesmen had left for their respective territories he spent the rest of his time abusing the public's taste because it did not buy as freely as he had expected. All suggestions from the sales force were treated as excuses to cloak their so-called inability. The manager could not see that the class of people to whom he catered was not large enough to consume his output. It is true that novelty in design was desired but the majority of people do not wish to be too conspicuous in their display of it. If your line does not sell as well as you think it should, do not hesitate to solicit suggestions. You do not have to accept every idea that is offered, but none should be thrown aside unless someone else besides yourself is also of the opinion that it is valueless.

Discusses with Salesmen

One of our leading manufacturers always makes a point of inviting his salesmen into the house when new lines are being introduced or changes made in the old lines, unless it happens in the middle of a season, when he will express a sample to each salesman, and ask for his criticism. The salesmen, being in closer contact with the ultimate consumer, are bound to know the points of your product which are not as strong as they might be—because no line is perfect from every standpoint—and it is from their experience that you can, if you will, build an unassailable reputation for your goods. It is realized, of course, that just as there are employers who cannot bear the slightest criticism, no matter how helpful, so there are salesmen who will not offer suggestions even if asked. This class of salesman knows all your weak points but believes it his mission not to strengthen but to make your customer pay for them. Such a man is not honest—either with the house or his customers—and should not be kept in any organization. It is far better to

have a salesman who is continually referring you to competing lines for better values than to retain one who is always eager to side in with you on every issue.

Drop Detail,—Look and Listen

Drop all that detail work you are doing,—then look and listen. There are few managers but could profit by the experience of the president of a large Chicago concern, who had received several complaints from a large shareholder that the manager, who was receiving \$15,000 a year salary, did little else but stand, with one foot on the radiator and his chin in the palm of his hand, looking out on Michigan Avenue. The company was a very prosperous one and it did not take the president long to answer that shareholder's complaint. The latter was politely told that if the firm could get a few more men who could look out of the window and get such valuable thoughts there was plenty of room for them, and he would consider them cheap at \$15,000, per annum.

The only difference between a progressive manufacturer and an unsuccessful one is that one works with his head and the other with his hands. It is surprising the number of men who do not grow with their business. They start in a small way—doing a little of every job, from office boy to Superintendent, and they continue to check invoices or share a foreman's duties long after the concern has grown past the "toy" age. How is he to know whether he is up-to-date or woefully behind the times when he never has time to visit other plants in his line of industry or thoroughly read the magazines which are eager to help him to succeed? Ask yourself why some of your competitors are doing twice the volume of your business and are able to really enjoy life. Do not take refuge behind the excuse that another firm may be older than yours. Henry Ford was not the first man who made automobiles, by any means. In fact, age has been a detriment instead of a help to many a firm. They find it harder to change their methods to conform with modern competition. As a rule, they cannot understand why the same policies which made wealth for them years ago are a source of loss to-day.

Quality and Not Quantity

Unlike the "good old days" the salesman who returns from his territory with the greatest number of orders is not always the best. It is essential to know whether he has overstocked any of your customers; which will cause a subsequent loss to the house as well as to the merchant. If you have not a one-price policy, it is also necessary to know at what price all those orders were taken and on what terms, dates of delivery, etc. A sales manager has to be more than an optimist. He knows the direct relation between excessive prices and small sales, but does he realize that a larger turnover does not necessarily mean more profits? If there is one point which may be repeated week in and week out, throughout the year, to ninety-nine out of every hundred sales managers, it is the fact that anyone can sell an unlimited quantity of any product the price of which is low enough. The weak sales manager spends half his time in the general manager's office trying to convince him that the firm's prices are too high—that "leaders" and still more leaders are needed to stimulate their sales. It is safe to say that, if the average sales manager spent half as much time analysing his market as he does worrying over the "load" he is carrying or congratulating himself on his "stupendous" success, his employers would be able to double his salary.

Some time back a certain firm which had made a practice of selling several of their cheaper lines at cost in order to

advertise their more expensive brands, decided to place every article on a profitable basis. The sales manager, argued that without these "leaders" his sales would drop to half their volume. He used reams of paper and days at a time proving, to his own satisfaction, that nothing but ruin stared the company in the face if the new policy were carried out. The sales manager lost his case but to-day he takes all the credit for the greatly increased profits of that company.

A genuine "leader" with proper restrictions is a necessary sales stimulant at times but great care should be taken with its distribution. One firm allows each salesman a fixed percentage of his quota to be composed of "leader" sales but it is expressly stipulated that only a certain number can go to each customer, the latter quantity being determined by the size of each order. In this way only, will you know what the experiment will cost.

Adhere to Price List

Another point which will stand close study by all sales managers is the hypnotism of high-sounding names. It does not matter how desirable a large customer's business may be, if you cannot make a profit on it it is of no value to your firm, for profit is all you are working for. But how many sales managers will refuse to cut a price to secure orders from most large firms? Price fixing is too important a matter to be left in the hands of any one man. Issue a price list and insist upon its being closely adhered to. The prices at which your goods are to be sold should always be settled by a committee—preferably composed of the factory manager, sales manager and general manager—the latter being furnished with the full cost data pertaining to every article.

Some firms make a practice of having the salesman place a price on each line without knowing its cost—the belief being that unless an article "looks" its value it does not matter how much it costs. Like every other argument it appears solid from at least one side but its weakness lies in the fact that, while it discards those lines which would not sell well, it has the tendency to inflate the value of others, creating great dissatisfaction when it meets competition. It reminds one of a certain sales manager who used to total his different salesmen's orders for a season and then ask for an arbitrary increase over that figure. The bookkeeper could have done either. Where and how are your salesmen going to get additional business—that is real sales management—for unless a sales manager knows the per capita consumption of his product in the different districts how does he know whether he is getting his share?

Study the Demand

Sales analysis means more than totalling customers' or salesmen's orders—you must know the demand for your product in each territory. Any intelligent salesman can inform his house what each customer's turnover is in his particular line and it is then but a simple arithmetical problem as to how much of this trade you can dominate. Certain sales managers would throw up their hands in horror at the thought of their staff doing a little so-called clerical work, but as sales management is a science, and science is based upon facts, it is readily seen to what class the objectors belong.

Next month the cause and cure of most labor troubles will be outlined.

The Part Played By Our Manufacturers*

A Plea for More Generous Recognition of the Services of the Industrial Interests of the Country in Helping to Win the War and in Maintaining National Prosperity — The Need of Preparing Now to Meet Inevitable After-War Conditions

By J. S. McKINNON

Second Vice-President, Canadian Manufacturers Association

THIS is Manufacturers' and Transportation Day and I believe, Sir, you have done well in so honoring the manufacturers of Canada. If there is one element of the community that has played well the part allotted to it, I have no hesitation in saying it is the manufacturers of this Dominion during the four terrible years of this war.

From the figures which I present herewith you will see that much of the prosperity that Canada is enjoying at the present time is due to the fact that we have in Canada a

in the past few years and which is assisting to such an appreciable extent the allied armies in the field, and by giving employment to thousands of Canadians is preserving to a large extent the "morale" of our people, in my judgment the tariff can be completely justified on these grounds alone.

A section of the press are hounding the manufacturers, or at least are endeavoring to make it unpleasant for them, by unjust criticism and by applying to them that most over-worked and unpopular word "Profiteer."

EXPORTS FROM CANADA OF DOMESTIC PRODUCTS

12 Months Ending March

	1913	1914	1915	1916	1917	1918
Mines	\$57,442,546	\$59,039,054	\$51,740,989	\$66,589,861	\$85,616,907	\$73,760,502
Fisheries	16,336,721	20,623,560	19,687,068	22,377,977	24,889,255	32,602,151
Forest	43,255,060	42,792,137	42,650,683	51,271,400	55,907,209	51,899,704
Animals and their Produce..	44,784,593	53,349,119	74,390,743	102,882,276	127,795,468	172,743,081
Agriculture	150,145,661	198,220,029	134,746,050	249,661,194	373,413,701	567,713,584
Manufactures	43,692,708	57,443,452	85,539,501	242,034,998	477,399,676	636,602,516
Miscellaneous	97,311	121,088	662,802	6,792,932	6,353,554	4,706,250
	\$355,754,600	\$431,588,439	\$409,418,836	\$741,610,638	\$1,151,375,768	\$1,540,027,788

Comparing 1913 and 1918, percentage of increase has been for

Mines.....	30 per cent.	Forest.....	10 per cent.	Agriculture.....	275 per cent.
Fisheries	100 "	Animals.....	300 "	Manufactures.....	1350 "

body of manufacturers, ready and able and willing to meet the abnormal conditions that have arisen and to throw themselves into the breach and produce from their factories the articles that the allied governments require. By this means they have done and are doing much to assist the brave men at the front to achieve the great successes at present being won and thus the manufacturers are helping preserve liberty and civilization so that the world may continue to be a decent place in which to live.

Some citizens who are not conversant with the work performed by the Canadian Manufacturers Association have the idea that the C.M.A. exists for the purpose of promulgating policies of high tariff, completely overlooking the fact that it maintains a Transportation Department, Commercial Intelligence Department, Insurance Department, Legal Department, and committees covering all the commercial activities of the Dominion.

Regarding the tariff, will you permit me to observe that, if the tariff has done nothing more than to make possible the nucleus of the great manufacturing that has taken place

When a contract is to be awarded, it is the Government that sets the price. Manufacturers can take the contract or leave it.

If a manufacturer accepts it, makes the article up to standard, speeds up his production, and through his expert help lives up to and carries out his contract and delivers the articles on time, and if he incidentally makes a profit on the contract, I ask you, gentlemen, is it quite just and fair to call that manufacturer a profiteer. A Canadian citizen who has kept his factory running day and night to feed the guns of the allies and to save allied soldiers from paying the great sacrifice and at the same time help win the war; either that or are we to place a premium on the man who failed in carrying out his contract and made no profit?

Army supplies are wanted when they are wanted, and they are wanted badly.

I would like to see a section of the press refrain from their unjust criticism of the manufacturers and assist them in their most difficult task.

After a manufacturer has completed his contract, delivered his goods and made his profit, the Government steps in and coolly relieves him of a goodly portion of his profit by

* Address delivered on Manufacturers' Day, September 5, 1918, at the Directors' Luncheon of the Canadian National Exhibition, Toronto.

the system of taxation. I have not heard of many instances where the manufacturer objects to this tax, knowing further that he is not only assisting the Government but, by keeping his factory running, is providing work for those who require it.

May I say that as a rule big business interests as carried on are not owned by one man, but in the majority of cases the management act as trustees.

Now, Sir, one of the most serious questions next to winning the war that ever confronted eight millions of people is looming large on the horizon and that question is this: If the exports of the manufacturing industries of this country should, during the period of reconstruction, shrink from 636 million of dollars as in 1918, to 43 millions as in 1913, what will happen? That shrinkage spells depression.

I can safely say there is not a manufacturer in Canada who is not thinking of this condition and endeavoring to prevent it, and it behooves every citizen of Canada to give heed to this serious condition and in every way possible assist the manufacturers. If we are to prevent the serious condition above mentioned, I believe every wheel should be kept turning.

Manufacturers should look to the different markets of the world for export business. When Government contracts cease and peace conditions prevail (as we all trust will be soon) contracts will be smaller, "speeding up" cannot be maintained at the present tension, and competition will be keener. Then the manufacturers will commence to realize the full meaning of that word "Efficiency."

Keep All Machines Running

In the meantime, let us get ready by keeping every possible machine running so that when the men come back work can be provided for them. It will not do to wait until the men do return. This work must be started now and kept going.

I believe in a system of safe and sane spending so that we may not only say Business as usual but Business better than usual and so work may be provided for every returned man.

Our manufacturers and governments must give greater attention to technical education. If education is a provincial matter as laid down in the British North America Act, it might be a good time to change some of the clauses of our Magna Charta and put the responsibility on the Dominion Government for this most important matter.

We want better workmen. Workmen should be given the opportunity of attending institutions where they will receive necessary instruction and the whole people should pay for it and the whole people is the Government.

We must all stand shoulder to shoulder.

Interests are Identical

We have instances of the son of the employer, the son of the employee as well as the son of the farmer standing side by side in France and Flanders.

There, their interests are identical.

Why should not the fathers of those boys stand shoulder to shoulder at home endeavoring by better understanding to make their interests identical in building up a great and glorious Canada?

Let us by conference and better acquaintance banish from Canada any difference between the East and the West. Drop from our category such words as Capital and Labor and realize that everyone these days is a worker, and it does not matter much whether he is in an executive position or anywhere else. Every man should be working and working hard.

Instead of hampering manufacturers, it is a time for assisting them and if proper assistance is given, as in the past they have shown their adaptability, the same will happen in the future and much depression may be avoided.

Let me assure you, gentlemen, that you may depend on the manufacturers of Canada doing their full quota to bring this war to a successful termination, and when the war is won and even before, men will be giving thought to after-war conditions in the hope that Canada will rise to the occasion by endeavoring to find employment for the returned soldiers and that as few disturbing elements as possible will be found during the reconstruction period.

History of the Stellite Alloys

Credit for the Discovery of the Alloys of Cobalt and Chromium Due to an American, but Canadians Can Claim to Having Made Possible the More Extended Use of these Alloys

By W. L. GOODWIN, D.Sc., F.R.S.C.

Queen's University, Kingston

AS the newspaper reports of the reference to these alloys made in my address to the Manufacturers Association in June last, have led to a good deal of misunderstanding regarding their discovery, it may be well to give to the public through INDUSTRIAL CANADA a short account of their history. In *Metallurgical and Chemical Engineering* of May 15th, Mr. Elwood Haynes, of Kokomo, Indiana, published an interesting statement of his discoveries, from which I will quote the facts so far as they concern his work. As early as 1899, he tells us, he made small buttons of an alloy of chromium and nickel, which showed an unusually bright lustre of permanent character. This alloy was made by reducing the mixed oxides with aluminum. Later he obtained little pellets of an alloy of cobalt and chromium using the same method of reduction. It had the same bright permanent lustre, but was harder than the nickel alloy. Still later he reduced the mixed oxides of cobalt and chromium by means of carbon

and obtained considerable quantities of the alloy, which he was able to cast into bars of remarkable strength, rigidity, and hardness, as well as complete immunity to all atmospheric influence. They were capable of taking a good cutting edge, and Mr. Haynes saw that it was possible to use this alloy in place of steel for pocket-knife blades and table knives. But the alloys, containing 45% of chromium and upwards were very hard to forge. After casting into knife blades they showed extremely fine grain, high elasticity, and a hardness equal to that of the best quality of steel. The permanence, general utility, lustre, and color of these blades were found to be very remarkable. Thus originated "steel's first rival." It is true that it is much more costly, but this does not preclude its use for table-knife blades, pocket cutlery, surgical instruments, dental instruments, small evaporating dishes, spoons, forks, and scissors, in which the cost of the raw material is not so large a factor

as that of manufacturing it into the finished articles. "Lancets made of this hard alloy are now in use by many expert surgeons, and are proving highly satisfactory, since they are unattacked by all antiseptic solutions used in surgical work, and at the same time take a keen edge, equal to that of the best tool steel."

But the quantity of cobalt available was so small that it seemed out of the question to bring these alloys into general use. About 1907 Mr. Haynes became aware of the large quantities of cobalt oxide accumulating as a by-product of the extraction of silver from the Ontario ores. He took out his first patent on Dec. 17th, 1907. In 1910, he read before the American Chemical Society, meeting in San Francisco, a paper on "Alloys of Chromium and Cobalt." He subsequently discovered that the addition of tungsten and molybdenum made the alloys harder than any steel, and gave them a lower melting point, thus making them easier to cast. A remarkable property of the alloys is that they retain their cutting edge at high temperatures and so are the very best material for high speed tools. But the difficulty of forging this material makes it necessary to cast it into the desired form. However, Mr. Haynes has developed a new series of alloys of cobalt and chromium with other metals, including iron, and we are informed that these can be forged. They have been referred to as *Festel Metal*. "Thus far, lathe tools, surgeons' scalpels, and dental instruments are the only forms of stellite which have been placed on the market. It is hoped, however, that other articles will soon be forthcoming. Among these will be table and pocket cutlery" . . . "Table-knife blades made of the alloy remain brilliant and untarnished after years of service" . . . "A teaspoon, which was weighed before and after six months' use, showed no weighable loss whatever." . . . "In stiffness it is superior to steel, and in fact to any of the alloys or combinations in practical use. Table-knife blades can therefore be made quite thin and still be thick enough for practical purposes."

It is thus seen that the credit for the discovery of the alloys of cobalt and chromium is due entirely to Mr. Haynes. But Canadians can justly claim having made possible the more extended use of these alloys. Up to the discovery of the ores of the Cobalt region the amount of cobalt available was so small that it was out of the question to extend its use in the directions indicated by the discovery under discussion. At the same time it was imperative to find new uses for this valuable by-product of our silver mines which

was accumulating in huge quantities at Deloro and other Ontario reduction works. In 1911 the subject was taken up in the metallurgical laboratories of Queen's University, and extensive investigations were carried on directed towards improving the methods for making pure cobalt oxide, and for reducing it to the pure metal. The Deloro Reduction Works, using the results of these researches, made its first pure metallic cobalt on a large scale in 1915, and in the same year first made stellite under the Haynes patents. The necessary chromium was bought in New York, where it was being manufactured by the Goldschmidt thermite process. By another series of investigations carried on in our laboratories, improved processes for making chromium oxide from the ore (chromite) have been developed and also a process for reducing it to pure chromium. The situation of the stellite alloys at this date is then as follows: The most important constituent—cobalt—is a by-product of the silver mines of the Cobalt district, and the pure metal is now being manufactured at Deloro, Ontario, by a process worked out by Canadian chemists. The Ontario mines produce by far the greater part of the world's supply of cobalt ore. The second main constituent—chromium—is now being made by a process also worked out by Canadian chemists. The raw material—chromite—is found in the Province of Quebec; so that these useful alloys can be manufactured from Canadian materials by processes to which Canadian chemists have made important contributions. Stellite tools are manufactured in Canada by the Deloro Smelting and Refining Co., at Deloro, Ontario.

The production of stellite is increasing rapidly. In 1916 the output was 57,792 lbs. In 1917 this had risen to 147,360 lbs.

A statement of the composition of some of the alloys may be found interesting:—

Cobalt.	Chromium.	Tungsten.	Molybdenum.	Remarks.
75.	25.	—	—	Original stellite.
70.	25.	5.	—	Forges readily; suitable for wood-cutting tools and cutlery.
60.	15.	25.	—	Suitable for lathe tools for cutting steel and cast-iron.
55.	35.	10.	—	
50.	30.	20.	—	
55.	15.	25.	5.	High speed tools.
45.	15.	—	40.	Very hard.

Progress of Pacific Coast Shipbuilding

The Lyall Yards of North Vancouver, which recently completed a contract for six standard wooden ships for the I.M.B., and which are now engaged in building six auxiliary schooners for their own account, have secured a contract for eight 1,500-ton twin screw wooden steamers for the French Government. These eight steamers comprise part of a total of 40 ships for the French Government, which will be built in British Columbia shipyards, contracts having already been let to the Western Canada Yards at Vancouver for five and the New Westminster Construction Co. at New Westminster for five, and the Coquitlam Construction Co. for two.

The French Government has also awarded to the Foundation Co. at Victoria a contract for the construction of twenty wooden steamers of 3,000 tons capacity. These contracts call for delivery of the ships complete, that is, with engines, boilers, and all auxiliary equipment installed. It is evident that the wooden shipbuilding industry in British Columbia will be quite brisk for the next year or two at least.

The John L. Mullen Construction Co., of Pittsburgh, have just commenced work at Prince Rupert, on five 8,500-ton steel ships.

The Coughlan Shipyards at Vancouver, recently launched their third 8,800-ton steel steamer. It is reported that the Coughlan firm have acquired the controlling interest in the Robertson Iron Works of Victoria. The plant of the last-named company has recently been moved to Vancouver to premises adjoining the Coughlan shipyards, and it is understood will be principally employed in turning out auxiliary equipment for steel steamers which Coughlan's are building.

The Wallace Shipyards of North Vancouver are also engaged in building steel steamers, and this branch of the shipbuilding industry in British Columbia gives promise of being fully as active as the wooden shipbuilding programme.

Among the recent contracts for steamers for local service was one awarded to the Westminster Marine Railway Co., for two large tugs for the I.M.B., to be used in towing spruce logs from the Queen Charlotte Islands to the local mills.

Economic Housing of Industrial Workers

Some of the Problems to be Solved before this Result can be Assured—Town Planning as Conducted to Date by the Commission of Conservation only Touches Fringe of the Question—Employers Must See that Workers are Properly Housed

ARTICLE I

By LOUIS SIMPSON

Member of American Electro-Chemical Society and Industrial Engineer

AT last, the Canadian manufacturer is face to face with that most intricate problem of how to assure his industrial workers comfortable and sanitary housing, at a reasonable charge as to rental, and with a reasonable annual expenditure for fuel.

To many manufacturers this is a comparatively new problem, though a few have had to seek possible solutions at different times during past years.

The writer has been amongst these unfortunates, and because of the experience, gained through years of studying the problems involved, the solution of which makes economic housing possible, this article has been written.

Town planning as, up to date, conducted by the Commission of Conservation, has only touched the fringe of the question. The work done by the Commission, in inducing the several provincial Governments to enact Town Planning Acts, has been beneficial, but that work does not solve the question of economic housing. The attention that has been called to the suicidal speculation in building lots, which has caused abnormal and entirely unjustifiable prices to be demanded for such lots, has also been useful, but the return to sanity from madness, lately manifest, does not solve the question of economic housing.

The reports, issued upon Town and Rural Planning, do not solve the question of economic housing. The work done has been largely restricted to the political and municipal, rather than to the constructive and practical, and, therefore, up to date has had little or no practical influence upon the question of economic housing.

House Workers in Comfort

It is important, it has become necessary, that employers of labor see that their workers be housed in comfort, *under good sanitary conditions*, and at a cost for rent and fuel that will not be too onerous, having regard to the wages paid to them.

No manufacturer desires to be obliged to provide housing for his own work people. Every manufacturer prefers to devote his time to the direction of his special industry and his capital to the extension of that industry. But when the cost of land, improvements, and of construction become so high that those who are possessed of the very necessary money refuse to risk that money in the construction of houses to be rented to industrial workers, the manufacturer, against his desire, may be compelled to lock up his capital in the construction of such houses or otherwise lose his work people. Surely, in such case, the manufacturer is between "the devil and the deep sea"—and no Government—Dominion or Provincial, and no Government officer, either Dominion or Provincial, has, up to date, furnished the manufacturer with the information that is necessary to enable him to provide the economic housing that circumstances may compel him to provide.

Were, to-day, the houses, rented to Canadian industrial workers, constructed under the best economic conditions,

there would have been no need for Governmental assistance, but it is notorious that this is not the case. It is well known that not only are the houses, generally, not so constructed, but that the majority of the builders or contractors, who have constructed such houses, know little or nothing about the economics of house-construction. The construction of the class of houses, under discussion, has seldom warranted the attention of competent construction engineers, and architects are not, as a rule, renowned for any close attention to the economics of *small* house construction.

Houses Badly Constructed

Houses of this class, as generally constructed in Canada, are not only badly constructed, but they are, also, too often uneconomically constructed. Under such conditions, is there any wonder that the industrial worker has to pay high rents? which, together with the outrageous expense he is too often put to for fuel, makes the very poor accommodation provided so costly that the wage earned is not sufficiently large to furnish the money called for and also provide for other legitimate expenses. Material comfort, *not frills* (in comfort is included *proper sanitary conditions*), is what the industrial worker requires, and this he should be able to secure at a cost, including cost of the necessary fuel, that the wages earned warrants.

Rents are the total of such charges as interest, depreciation, empties, insurance, repairs and taxes and the total rent may be made up as follows:

Take for example a house, which with land and improvements (roads, sidewalks, sewers and drainage) costs, say \$2,000. The annual charges which, as already stated, ultimately governs the rent charged would consist of the following:—

Value of House, Land and Improvements, \$2,000.

Interest	- at 6 per cent. on \$2,000	...	\$120 00
Depreciation	at 2 per cent. on 1,800	...	36 00
Empties	- 1 per cent. on 2,000	...	20 00
Insurance	- ½ per cent. on 1,600	...	8 00
Repairs	.....		6 00
Taxes	- ½ per cent. on 2,000	...	10 00
			<hr/>
			\$200 00

It is evident from the above figures that a 10% gross return, upon the money invested, would be as low a return as should be received from money invested in such property.

All the above charges, excepting that of interest will vary to a certain extent, depending upon local conditions; those interested will, naturally, know local conditions, and can make the necessary corrections.

The charge of 2% for depreciation upon the buildings (nothing charged against the value of the land and improvements) is a reasonable one, as houses rented to industrial workers are, at all times, liable to abuse, but it is possible that with certain types of construction, this charge may be

reduced. It will however be admitted that the life of a house of wood-frame construction, with wood shingle roof, will not, as a rule, exceed 50 years.

The charge for empties is a legitimate charge, though too often omitted. Even when houses are in full demand, there is generally rent lost between the moving out of one tenant and the moving in of the next, nor is it unusual when the house belongs to the employer, that rent is lost, owing to the house having to be left empty to await the arrival of a desirable employee. Moreover, there is always a possibility of rent being lost, through the occurrence of death or of infectious disease.

Fire insurance is a difficult charge to estimate. Environment has much to do with the cost; the condition of the environment is dependent upon others, over whom the owner of the house has no control. Also the fire insurance companies do not always charge the rate warranted by the quality of the construction used. The law of averages, upon which the fire insurance companies base their rates, is not favorable to those who are willing to provide improved fire conditions, even and though to do so costs more money. The improved risk is called upon to pay for losses sustained upon bad risks.

Repairs.—For a few years the cost of repairs may be very small, but the time always comes when repairs have to be made, that is, if the property be kept in good condition. If the houses are of balloon frame, painted clap-board construction, with wood shingle roof, the cost of the repairs during a period of 50 years will total more than \$300, but it must be remembered that to the \$300 directly allowed for depreciation must be added the interest accruing year by year from the depreciation already allowed. For a house of improved con-

struction the total of the two should be more than would be required. Taxes vary widely as they are dependent upon local conditions.

The question of rent, however, does not end with the actual rent paid. Houses are constructed, the occupiers of which have to purchase twice and even three times the fuel found necessary by the occupier of a house properly constructed. The occupiers of the poorly constructed houses may have to pay \$20, \$40 or even \$50 per year extra for fuel. This extra and unnecessary (were the house properly constructed) charge for fuel has to be taken into consideration and has to be added to the rent, increasing the same by 40c. up to nearly \$1 per week. Apart from the national economic question, involved through the enormous waste of fuel thus caused, the coal being largely imported into Canada at great cost, the continuance of which waste should engage the attention of Canadian statesmen, with a view of securing its prevention, the question of badly constructed houses is one that should engage the attention of every manufacturer, whether their interests are located in the warmer sections of Canada or otherwise. Why should jerry or incompetent builders be permitted to cause the industrial workers to waste a considerable portion of their earnings? Surely, it is evident that manufacturers to protect themselves, will find it necessary to protect their employees.

It is not good business to "cry over spilled milk." It is more profitable to consider how, in the future, it is possible to prevent the waste. The problems to be solved are not few, but such as they are they will be enumerated and explained and possible solutions will also be indicated and suggestions will be given as to how these solutions should be tested and reported upon.

Uncle Sam to Train Employment Managers

By EDWARD D. JONES

Professor of Commerce and Industries, University of Michigan

THE United States Government has found if necessary to enter the field of education on a large scale. War emergency courses in employment management, conducted by the Employment Management Division of the War Industries Board, under the auspices of five governmental departments, have been arranged for in nine universities to date. The outline of the courses of study was made by Captain Boyd Fisher, who has general supervision of the work.

These courses in employment management are designed to train men or women, who already have a basic experience of at least three years in industrial life and factory methods, and who have come in actual contact with shop problems. Employers of labor, particularly those having war contracts, are urged to suggest men or women from their own organizations as candidates for these courses. With the increasing tightening of the labor situation, it is absolutely essential that large plants have an efficient central employment department. If the Government is to take upon itself the task of furnishing labor when called upon, it is necessary that labor be employed in the proper manner. In other words, each man should be hired to do the thing he is best fitted to do. In these days every man must count, and there must be no square pegs in round holes. It has been thoroughly proved that an experienced employment manager, in charge of all hiring and firing, comes very near to solving the labor problem. Therefore it is up to the employer to place his house in order and make the best use of the men with which he is supplied.

Courses have been arranged for at Harvard, in co-operation with the Massachusetts Institute of Technology, Boston University, in Boston; Columbia University, New York; University of Rochester, Rochester, N.Y.; Carnegie Institute of Technology, and the University of Pittsburgh, Pittsburgh, Pa.; University of Washington, Seattle; and the University of California at Berkeley.

There already have been 172 graduates from the classes conducted thus far. Most of these have returned to their own plants and placed in operation a department of employment. In each case where a central employment department is in vogue, there is never a thought of returning to the old-fashioned hit or miss method of hiring men.

The courses of instruction in the various schools run from six weeks to two months, and the classes are conducted by the foremost authorities in the country on the various subjects covered.

The course of study deals chiefly with the problems of employment management. Brief consideration is given, however, to statistics, labor economics, and business organization and management. The materials presented on the subject of employment management covers the organization and equipment of an employment department, the employing of the workers, the training of the workers, the payment of the workers, the control of working conditions, effects to keep the work up to standard, and the government of the shop. There are no charges for the course, except the outlay for living expenses of students and about \$15 for books and supplies.

Welfare Work in British Munition Plants

Importance of Welfare Supervision Emphasized and in Large Plants Appointment of a Special Welfare Supervisor is Urged—Need Recognized of Making Provision for Serving Meals in or Near the Factory and Importance of a Well-Chosen Diet Pointed Out

By GRANT BROWN

DOES welfare work promote efficiency? What hours of work secure the maximum output? How large should a factory be to make a canteen worth while? What sort of canteen is most likely to give satisfaction? What is the special value of welfare work where women are employed?

If, at absolutely no expense to yourself, you could get a board of experts to devote months to the study of these and similar questions, with the experience of some of the largest munition factories of the world to draw on, would you tell them to go ahead? And when the reports came in, would you consider them and see what light they throw on your own factory problems?

Well, the committee has gone ahead. The reports are in. The bill is footed by the British taxpayer. For the Canadian manufacturer the results are available gratis—and for the American manufacturer, too. So valuable, in fact, did the reports seem to the U.S. Council of National Defence that the U.S. Bureau of Labor Statistics at their request has reprinted a number of the British memoranda to make them readily available for American manufacturers of munitions.

And now a word or two about our "board of experts." They were appointed in September, 1915, by the Minister of Munitions. When Lloyd George began to turn Great Britain into a gigantic munitions factory, he soon realized that the welfare of munition workers was closely involved with the problem of maximum production. The appointment of the British Health of Munition Workers' Committee followed. Its duties were "to consider and advise on questions of industrial fatigue, hours of labor, and other matters affecting the personal health and physical efficiency of workers in munition factories."

Members of Committee

It was a strong committee. The chairman, Sir George Newman, is an authority on Bacteriology and questions of Public Health. Another distinguished member of the Commission, Sir Thos. Barlow, was president of the Royal College of Physicians from 1910 to 1915, is physician-extraordinary to the King and, as one might expect, is recognized as one of the ablest and busiest of British physicians. A name perhaps more familiar to the Canadian public is that of J. R. Clynes, the Labor M.P., who helped Lord Rhondda make a success of rationing Great Britain and has since become Food Controller himself. A prominent lady member of the Committee might be mentioned, Mrs. H. J. Tennant, wife of the Rt. Hon. H. J. Tennant, M.P., formerly Secretary for Scotland. Mrs. Tennant before her marriage gained valuable experience as Superintending Inspector of Factories. Other members of the committee were qualified by special knowledge of factory conditions or of medicine—sometimes of both. The committee, accordingly, was thoroughly qualified by training and experience to get at the facts, and sufficiently diversified to reflect different viewpoints.

The results of the Committee's investigations have been embodied in a series of memoranda on such subjects as Sunday Labor, Hours of Work, Fatigue, Sickness and Injury, Special Diseases, Ventilation and Lighting, Eyesight, Welfare

Supervision, Canteens, Diet, Washing Facilities and Baths, etc. The more valuable of these memoranda reappear in three pamphlets, issued in 1917, by the U.S. Bureau of Labor Statistics: *No. 221, Hours, Fatigue, and Health in British Munition Factories; No. 222, Welfare Work in British Munition Factories; No. 223, Employment of Women and Juveniles in Great Britain During the War.

At a time when so many Canadian manufacturers are introducing or extending welfare departments in their factories, pamphlet No. 222, embodying the experience of the vast British munition industry in welfare work is of particular interest.

A Welfare Supervisor

The members of the committee have been thoroughly convinced of the importance of welfare supervision. In factories where not less than 500 men and 100 boys are employed the appointment of a special welfare supervisor is strongly urged. The duties of the supervisor are outlined and may be of interest to the Canadian manufacturer for purposes of comparison.

1. "To be in close touch with the engagement of new labor or, when desired, to engage the labor.
2. To keep a register of available houses and lodgings, to inform the management when housing accommodation is inadequate, and to render assistance to workers seeking accommodation.
3. To ascertain the means of transit used and the length of time spent in travelling; to indicate the need of increased train, or motor service; or to suggest modification of factory hours to suit existing means of transit.
4. To advise and assist workers in regard to feeding arrangements; to investigate the need for provision of canteen facilities, etc., and to supervise such canteen.
5. To investigate records of sickness and broken time arising therefrom; and in cases of sickness to visit, when desired, the homes of workers.
6. To investigate and advise in cases of slow and inefficient work or incapacity arising from conditions of health, fatigue, or physical strain.
7. To consider questions of sanitation and hygiene and to supervise the conditions of night work, Sunday work, long hours, and overtime.
8. To advise on means of recreation and educational work.
9. To investigate complaints and assist in the maintenance of proper discipline and good order.
10. To keep in touch with responsible organizations having for their object the promotion of the welfare of the workers."

The cost of such supervision is estimated at from 6% to 1% of the payroll. The Director of the Welfare Depart-

*Copies of these pamphlets may be obtained from The Superintendent of Documents, Government Printing Office, Washington, D.C.; No. 221 for 15c., No. 222 for 10c., No. 223 for 15c.

ment, British Ministry of Munitions, states that the output should, as a result of such welfare work, be much more than proportionately increased. Where women or girls are employed, in view of the special problems that arise, the appointment of a welfare supervisor is considered essential.

Value of Factory Canteens

The committee was strongly impressed with the need of making provision for serving meals in or near the factory. Where canteens were provided, experience showed "marked improvement in the health and physical condition of workers, a reduction of sickness, less absence and broken time, less tendency to alcoholism, and increased efficiency and output, a saving of time of the workmen, greater contentment, and better midday ventilation of the workshops." It was noted that women workers in particular, if left to their own devices, were liable to neglect their meals to the injury of their health and, in consequence, to the reduction of their efficiency. However, "in almost all large works the committee finds that there is a body of men or women (averaging at least 25%) who in the interest of physical health and vigor need canteen provision at the factory." The statement of a large employer of labor is given as typical: "We have never had a moment's doubt as to the importance of a comfortable dinner hour for our people *from the point of view of their efficiency in the afternoon.*"

Construction and Equipment

Canteen construction, equipment, and management are dealt with in considerable detail. The minimum dining-room floor space per head is given as 10 square feet; the approximate cost per place for temporary canteens is estimated at from £3 to £3 10s.; (permanent work would probably cost from 25% to 40% more). Practical suggestions are made regarding materials, ventilation, and lighting, the arrangement of rooms, etc. Lists of cutlery and glassware are given. The details of the equipment of a good canteen at Leeds for 280 persons are given in full and furnish useful hints. The committee even finds time to comment on the superiority of "an ordinary salt and spoon" to "pourer salts."

Different types of canteens are considered, varying from the mere provision of a room where the workers may eat their prepared food, to the fully equipped dining-room supplying hot and cold dinners. The need for accessibility and attractiveness is emphasized.

Diet

The importance of a well-chosen diet is fully recognized. One memorandum, quoted in full, contains the results of a careful investigation of the workers' dietary. Meals brought by workers from their homes were analyzed and their food value compared with that of meals served by the factory canteen. It was found that the meals brought from home were sometimes lacking in important nutritive qualities. The report loses something of its official calm in a contemptuous reference to the "unsatisfying meals which pale-faced young women may often be seen consuming in popular cafés," for example, "a roll, butter, milk, sugar, stewed prunes, and syrup." A meal brought from home by a hungry boy of fifteen showed the opposite extreme: potatoes, tomatoes, and bacon; jam puff; cake; bread and butter and jam. The report mildly hints that such a meal is more than enough even for a growing boy. In contrast, meals furnished by the factory canteen are better balanced and served in better condition, and accordingly are both more satisfying and more wholesome. The employee doesn't have to lunch on cold, stale, or spoiled food. The result is better health and better work.

A Specimen Menu

Typical menus furnished by successful canteens are given with prices and nutritive values. A specimen day's menu may be of interest:

Breakfast.

Bacon, 3 rashers	4d.
Bread, 3 slices; butter, jam.....	2d.
Tomato .....	.5d.
Sugar .....	.1d.
Milk .....	.5d.

Dinner.

Roast beef	4d.
Yorkshire pudding	1.5d.
Potatoes .....	.75d.
Cabbage	1d.
Apple pie and custard	1.5d.

Tea.

Bread, 2 slices; butter, jam	2.5d.
Cake .....	.5d.
Sugar .....	.1d.
Milk .....	.5d.

Supper.

Bread, 2 slices	2d.
Cheese	1d.
Meat	2d.
Pickles .....	.5d.

This gives a well-balanced ration of 3,120 calories for 25d. Menu and prices date from April, 1916. It is to be feared that both have altered for the worse by this time. It is interesting to read that "in some of the best-managed canteens the use of tablecloths has been found quite satisfactory."

Washing Facilities and Baths

Another feature of welfare work in British munition factories is the provision of adequate washing facilities. In the reports a separate memorandum is devoted to this topic. It has been found an advantage to give the worker a chance to clean up at the factory. Otherwise by the time he reaches home and makes himself presentable, his evening is gone. Cleanliness then promotes the self-respect and contentment of the worker. It makes for better health as well. The committee records that British munition workers showed their appreciation of washing facilities by using them, though sometimes there was a short period of inertia at first. The evidence of one employer may be quoted: "Spray baths are provided for the foundrymen who number about 100. Tickets can be bought at the rate of 10 for 3d.; this charge includes the use of towel and soap. Seven minutes out of working hours are allowed each man in the foundry to wash thoroughly before stopping time. Though the foundrymen are not in any way specially selected, they use the spray baths greatly, especially in summer."

Details as to lavatories, soap, towels, etc. are given. Emphasis is laid on the importance of satisfactory upkeep; to facilitate it, it is recommended that the construction of wash-rooms be both strong and simple, hard to injure and easy to clean.

Pamphlet No. 223 deals more particularly with the special problems presented by the employment of women and youths in munition factories—a subject already sufficiently familiar to readers of INDUSTRIAL CANADA.

The War and Welfare Work

One can hardly read these reports without being struck by the increased importance war has given to the human factor in production. To secure tremendous output in record time special care must be taken of the workman. Just as

(Continued on page 78)

Findings in Winnipeg Metal Workers' Case

Prairie Provinces Branch Issues Bulletin Giving Full Text of the Report of the Royal Commission Appointed to Enquire into a Dispute between the Metal Workers and their Employers in Winnipeg—Points of General Interest in the Decision

By G. E. CARPENTER

Assistant Secretary, Prairie Provinces Branch

IN view of the importance of the findings of the Royal Commission appointed by the Minister of Labor to enquire into a dispute between the metal workers and their employers in Winnipeg, a copy of the report of the Commission is given below. While the dispute originated in the metal working shops, the findings of the Commission will be of interest to the members of the Branch by reason of the fact that they deal with common labor.

The Commission consisted of Chief Justice Mathers, Chairman; Mr. F. G. Tipping, Chairman of the Trades and Labor Council, representing the workers, and as the employers did not nominate a representative the Minister of Labor appointed Alderman Geo. Fisher, Agent of the Scottish Co-operative Wholesalers' Society in Western Canada, whose friendly attitude towards labor is generally conceded, as a third member of the Commission. Added interest is given to the report of the Commission by reason of its constitution, and that with one minor exception their findings were unanimous.

Metal Trade Contract Shops and Automobile Repair Shops at Winnipeg, Manitoba, and Certain of their Employees

REPORT OF ROYAL COMMISSION

August, 1918.

To the

HONORABLE THOMAS W. CROTHERS, K.C.,
MINISTER OF LABOR,
OTTAWA, ONTARIO.

The undersigned Commissioners, appointed by Royal Commission, issued the 26th day of June, A.D. 1918, to inquire into and concerning causes of friction and unrest alleged to exist between the metal trade contract shop employers and the automobile repair shop employers and their employees in the City of Winnipeg, respecting wages, piece-work, and working hours and overtime, and other labor conditions, and into the nature and causes thereof, report as follows:

Your telegram to the Chairman of the Commission advising us of our appointment, was received on the 27th day of June, 1918, and on the following day we held a meeting with the representatives of the employers and the employees, for the purpose of outlining the procedure to be followed in the proposed enquiry. The desire was expressed by the representatives of both parties that the proceedings should be open to the public and should be reported stenographically, and William F. Perkins was employed for that purpose.

The chief contract shop employers represented at the first meeting were: the Vulcan Iron Works Company, Limited, the Dominion Bridge Company, and the Manitoba Bridge and Iron Works Company, the Alaska Bedding Company, the Stewart Sheaf Loader Company, the Northwestern Brass Company, and the Stewart Machinery Company.

The employers announced their intention of being represented by counsel. The representatives of the employees objected that the presence of counsel should not be permitted. Our view was that we could not arbitrarily refuse to any of the parties the right to present their case through whatever medium they might choose to employ, and we decided that any of the parties was at liberty to employ counsel if they saw fit to do so, a ruling in which the employees' representatives acquiesced.

In order that all parties should be free from embarrassment in the conduct of the enquiry, we decided that the proceedings should be conducted informally; that any party appearing before us would be permitted to make his statement without oath, and in such manner as he saw fit, and that there should be no cross-examination in the ordinary sense of that term, but that after any party had concluded his statement the other side would be at liberty to ask any questions directly bearing on or relative to the subject of the inquiry.

Having arranged these preliminaries, we appointed June 29th, at 10.30 o'clock in the forenoon, for the purpose of proceeding with the investigation. At that time we were attended by Mr. Pitblado, K.C., and Mr. Hugg, K.C., as representing the contract shop employers, no person appearing for the automobile repair shop employers, and by Mr. R. B. Russell, Business Agent for the Machinists; J. A. McClelland, International Vice-President of the Machinists; R. C. McCutcheon, representing the boilermakers and bridge shop men; William Ferguson, representing the patternmakers; J. T. Adair, representing the moulders; J. L. McBride, representing the electricians, and E. Robinson, representing the blacksmiths.

The demands of the men are contained in the following two agreements presented for signature to the contract and automobile shops respectively:

Agreement

This agreement, made and entered into this.....day of1918, by and between the..... and the Metal Trades Council ofand vicinity.

1. That each party to this agreement herein made agrees and consents to the following rules and regulations, which shall govern the mutual relations of the parties hereto mentioned.

2. Eight (8) hours shall constitute a day's work, from 8 a.m. to 12 noon, with one hour off for dinner between 12 noon and 1 p.m., for the first five days of the week; and from 8 a.m. to 12 noon on Saturdays.

3. "A"—All time worked over bulletin hours will be considered overtime, and will be paid for at the rate of double time.

3. "B"—Regular night shifts in shops or outside repair work shall be nine hours per night, five nights per week, and shall be paid for ten hours per night.

3. "C"—Should a man be working during the day, then be transferred to a night shift, he shall receive the regular rate of overtime for the first night.

4. All grievances which may arise in any shop shall be given consideration as follows: (1) All complaints and grievances to be adjusted by the foreman in charge, if possible. (2) When such adjustment cannot be made between the foreman and the craft directly interested, the matter will be taken up with the Company direct, by the Business Agent and the Committee representing the craft having the grievance, and they shall endeavor to reach a mutual understanding. (3) In the event an understanding cannot be reached by the Company and the Representatives of the Craft involved, a Committee of Representatives from the Metal Trades Council will meet the Company and try to bring about an adjustment of the grievance; and in the meantime there will be no lock-out on the part of the Company or strike on the part of the men.

5. That Business Representatives of the different Crafts shall have free access to the shops at all times, provided they do not interfere or cause the men to neglect their work.

6. "A"—Mechanics and all other help *shall be hired through the representative organizations*: provided, that in case of emergency the Company may hire help direct, and shall furnish a list of the names and the class of work of those employed to the Business Office of the Organization having jurisdiction over them, within twenty-four (24) hours after their employment.

6. "B"—No employee representing his fellow workmen will be discriminated against.

7. Men receiving rates in excess of the minimum rates herein quoted will suffer no reduction, and will share in the general increases agreed to.

8. This agreement will remain in effect for one year, except that wage rates will be revised every three months, according to the official information on the cost of living.

9. Apprentices shall serve four (4) years, and during said term shall be advanced in all branches of the Trade. The ratio of apprentices shall not exceed one for the shop at large, and one for every five journeymen regularly employed.

10. "A"—*Patternmakers*—Shall be any person who has served an Apprenticeship at Patternmaking.

"B"—*Moulders*—Shall be any person who has served a regular Apprenticeship, or has had four years' varied experience at the trade.

"C"—*Blacksmiths*—Shall do all welding by forge, furnace, electric, Thermit or Acetylene Process—all work previously done by Blacksmiths—Forging, Tempering and Dressing of Tools, Case Hardening, Potash or Bychloride Tempering, Bending and Straightening of Angle Iron, L Iron, Channel Iron and L Beams.

Any man doing the above work or other work appertaining to the Blacksmith's Trade shall be considered a Blacksmith and shall receive the Blacksmith rate.

"D"—*Boilermakers*.

(A) Boilermakers, Bridge Shop Men and Tank Men, and Street Railway workers—work consists of testing, laying-out, fitting-up, patching, riveting, caulking, stay-bolting, tender, and all tank work, and all work contracted for Boiler and Contract Bridge Shops—all acetylene and electric welding. All men coming under this classification shall not receive less than 75c. per hour.

(B) Specialists' work consists of Grate work; Punch and Shears; Multiple and Radial Drill Machines; Air Motors. Screwing Machines; Nut Tapping; Grinders; Saw Operators; Reaming; Cutting and Handling of all Flues and Tubes; Holders-on; Switch Repairing; Bolting together of Still or Iron Rails for Street Railway; Binding Rails; Cutting Rails with hand only. Men doing this class of work to be paid not less than 65c. per hour.

(C) Helpers' work consists of striking on all handle tools, scaling boilers and tanks; painting interior of tanks where no Painters are employed; and generally assisting the Mechanic to complete the work—also rivet heating. Men doing this class of work to be paid not less than 56¼c. per hour.

"E"—*Electricians*.

Men who have served an Apprenticeship to the Electrical Trade or had four years' varied experience in the following branches shall be classed as Electricians—Armature and Coil Winding; Battery Work; Lighting Systems; Power Systems, and maintenance of same.

Helpers will be men who assist Electricians but do not use the tools.

"F"—*Machinists*.

Machinists' work will consist of the operation of Lathes, Planers, Slotting, Milling, Shaping, Boring or other Machine Tools requiring skilled operation; laying off work and making and repairing of Tools and Machinery. Men employed on Drills and work not included above, which only requires a portion of skill, shall be designated Specialists. Helpers will be men who assist Machinists but do not use the Tools.

10. "G"—*Apprentices*.

Apprentice Rates—20c. per hour for the first year, and five cents (5) per hour increase each additional six (6) months until finish of Apprenticeship.

11. The following minimum wage scale shall prevail during the life of this agreement:

Machinists	75c	per hour
Machinists' Specialists	65c	" "
Machinists' Helpers	56¼c	" "
Acetylene Welders	75c	" "
Electric Welders	75c	" "
Moulders	75c	" "
Patternmakers	75c	" "
Blacksmiths	75c	" "
Blacksmiths' Helpers	56¼c	" "
Boilermakers	75c	" "
Riveters, Chippers and Caulkers	75c	" "
Boilermakers' Helpers	56¼c	" "
Electricians	75c	" "
Electricians' Helpers	56¼c	" "
General Helpers	56¼c	" "

Signed for the Metal Trades.

Signed for the Company.

.....
Etc.

Appendix to Moulders' Classification

Under the classification of Moulders it is to be understood that same includes Coremakers.

Foundry Specialists shall consist of the following: Furnacemen; Potcarriers; Grinders; Millmen; Cranemen; and Weighmasters.

All men coming under this classification shall receive not less than 65c per hour

Machine Moulders shall receive not less than 65c per hour.

All other Foundry Help will be designated as General Helpers.

Agreement

Auto Shops.

This agreement, made and entered into this day of 1918, by and between the and the Metal Trades Council of and vicinity.

1. That each party to this agreement herein made agrees and consents to the following rules and regulations, which shall govern the mutual relations of the parties hereto mentioned.

2. Eight (8) hours shall constitute a day's work, from 8 a.m. to 17 p.m., with one hour off for dinner between 12 noon and 1 p.m., for the first five days of the week; and from 8 a.m. to 12 noon on Saturdays.

3. All time worked over Bulletin hours will be considered overtime, and will be paid for at the rate of double time.

4. All grievances which may arise in any shop shall be given consideration as follows: (1) All complaints and grievances to be adjusted by the Foreman in charge, if possible. (2) When such adjustment cannot be made between the Foreman and the Craft directly interested, the matter will be taken up with the Company direct, by the Business Agent and the Committee representing the Craft having the grievance, and they shall endeavor to reach a mutual understanding. (3) In the event an understanding cannot be reached by the Company and the Representatives of the Craft involved, a Committee of Representatives from the Metal Trades Council will meet the Company and try to bring about an adjustment of the grievance; and in the meantime there will be no lock-out on the part of the Company or strike on the part of the men.

5. No employee representing his fellow workmen will be discriminated against.

6. Men receiving rates in excess of the minimum rates herein quoted, will suffer no reduction, and will share in the general increases agreed to.

7. This agreement will remain in effect for one year, except that the wage rates will be revised every three months, according to the official information on the cost of living.

8. Apprentices shall serve four (4) years, and during said term shall be advanced in all branches of the Trade. The ratio of Apprentices shall not exceed one for the shop at large and one for every five Journeymen regularly employed.

9. "A"—Machinists' work will consist of the operation of lathes, planers, slotting, milling, shaping, boring or other machine tools, requiring skilled operation; laying off work and making and repairing of tools and machinery.

9. "B"—Auto Mechanics' work will consist of the following: 1st class Mechanic will be a man who is capable of taking a car and with the aid of tools, give same a general repair, to a successful completion. 2nd class Mechanic will

be a man who is not used on general work, but who is confined to the following work: Gear, fenders, bodies and tops, radiators, bumpers, mufflers and brakes.

9. "C"—Helpers are men who assist Mechanics and work under their direction.

9. "D"—ELECTRICIANS—Men who have served an Apprenticeship to the Electrical Trade or had four (4) years' varied experience in the following branches shall be classed as Electricians: Armature and Coil Winding; Battery Work; Lighting Systems; Power Systems, and maintenance of same; installation of cables, and all electrical devices in connection with cars.

10. When reduction of expense is necessary, working hours will be reduced to seven (7) hours per day for the first five days of the week before any reduction of staff takes place. Men will be laid off according to their seniority.

10. "A"—In the event of the working hours being reduced below eight (8) hours, no men will be hired until the eight-hour day is resumed.

10. "B"—Any man working over thirty (30) days in a shop shall be considered on the Staff.

11. APPRENTICES' RATES—20c per hour for the first year and five cents (5) per hour increase each additional six months until finish of Apprenticeship.

12. The following minimum wage scale shall prevail during the life of this agreement:

Machinists	75c	per hour
1st class Mechanics	75c	" "
2nd class Mechanics	65c	" "
Electricians	75c	" "
Helpers	56¼c	" "

Signed for the Metal Trades. Signed for the Company.

.....
President.
.....
Secretary.

Signed for the Organizations:

..... Machinists, Auto Mechanics and Helpers.
..... Electricians.

It was stated that these several agreements did not necessarily represent the minimum which the employees were willing to accept, but that they were tendered as a basis for negotiations.

The attitude of the employers was that they would neither sign the said form of agreement nor make it the basis for negotiations. They stated they were then, and always had been, ready to negotiate with their own men, either individually, or with a committee, representing the different crafts in their shops, both as to wages and working conditions; but that they refused to recognize any outside organization, or to negotiate with the representatives of such organization. They stated that no complaint by their own men had been made to them, either concerning wages or shop conditions, notwithstanding that upon the receipt of the said draft agreement they had posted in their shops a notice of which the following is a copy:

Notice

The Company understands that there is a desire on the part of its employees to take up the question of conditions of employment in this Plant, and wishes to state that it is willing to meet representatives from any craft from its own shops to discuss questions relating to the conditions of employment of that craft, with the view of reaching an agreement.

There was no response to the notice, except in one shop, viz., the Dominion Bridge Company's. In that shop a committee of the employees waited upon the Manager and asked if he proposed to negotiate the agreement with the Metal Trades Council, but made no further demand or request.

Both forms of agreement above referred to were for a contract between the Metal Trades Council and the several employers, and the agreement tendered to the contract shop employers contained a clause providing that all mechanics should be hired through the representative of the organization.

The representatives of the men finally agreed to waive both of these provisions, and expressed their willingness that the agreement should be negotiated between the several employers

and committees of their own men, provided the employers would, if such negotiations resulted in an agreement, enter into an agreement in writing.

The employers appear to have been greatly alarmed by the demands embodied in the forms of agreement presented to them; an alarm that was not allayed by the subsequent withdrawal of the two clauses most seriously excepted to. We think the men would have been better advised had they embodied in the agreement terms more nearly approaching their minimum demands.

At this stage it appeared to us that there was no such serious difference between the parties that a mutually satisfactory understanding might not be arrived at with a little give and take on both sides.

We consequently adjourned, *sine die*, the public sittings of the Commission, and endeavored, by private negotiations, to bring about a satisfactory arrangement. For this purpose we conferred separately and apart, and in private, with each of the parties for the purpose of ascertaining just how far each was willing to go to meet the other. We ascertained that all the employers, with the exception of the Vulcan Iron Works, expressed a willingness to negotiate with a committee representing the different crafts in their own shops, and to enter into a written agreement, with such committee, if the negotiations resulted in an agreement. They stipulated, however, that this committee should act entirely independent of the Metal Trades Council, or of any other outside organization, and they declined to negotiate with a committee of all their employees.

The Vulcan Iron Works, while not positively refusing to negotiate with a committee of the different crafts in their shops, did not express a willingness to do so, but were willing to negotiate with their individual employees only.

Differences Between Parties

The representatives of the employees insisted that the committee should be one representing all the employees in the particular shop. They further stated that such committee would be under the direction and control of the Metal Trades Council, and would conduct its negotiations with the employers under the direction of the Metal Trades Council. It thus appeared that the intention of the employees was to conduct negotiations nominally through a committee of the employers' men, but in reality by the Metal Trades Council, acting through this committee.

The difference between the parties may be stated as follows:

1. The employers, with one exception, were willing to negotiate with committees representing the different crafts in their employment, such committee to be appointed and act entirely without interference from the Metal Trades Council, or from any other outside body.

2. The employees insist that such committee be constituted from all the employees of the particular employer, and act under the direction and control of the Metal Trades Council.

After negotiations extending over several days, neither party would recede from the position taken. Both sides seemed to regard the difference between them as fundamental.

Having failed to find any common ground upon which the parties could meet and negotiate with each other directly, we proceeded to enquire into the wages and working conditions in the contract shops. For this purpose we selected the Vulcan Iron Works, the Dominion Bridge Company and the Manitoba Bridge Company. These are the largest of the contract shops, and conditions prevailing in them are admittedly fairly typical of all.

For reasons we shall hereafter explain, we did not visit any of the shops or hear at first hand the demands made by the men, but only through the official representatives of the several unions in the Metal Trades Council.

The wages paid at present vary from 30c per hour to the laborer to as high as 70c per hour for the skilled mechanic. In this connection it is fair to point out that there has been a very considerable advance in wages from time to time; an advance which has more than kept pace with the increased cost of living. The employers rate and pay their men according to skill and ability. They claim that this is the only manner in which employees can be rated under present day conditions. The war has seriously depleted the country of skilled mechanics, and it is now quite impossible for employers to fully man their shops with men of that class. As a necessary consequence they have had to take in common laborers and give them the necessary training for one operation upon a machine. These men are in no sense skilled mechanics or entitled to be classed as, or receive the pay of, a skilled

mechanic. The great majority of men operating machines in shops at present belong to this class.

The demand of the representatives of the employees is that all employees be divided into three groups: mechanics, specialists and helpers, with a minimum wage of 75c, 65c, and 56½c per hour respectively.

Refused Consent to Visit

For several reasons we find it impossible to deal with this question with as much definiteness as we would desire. The representatives of the men refused to consent that we should visit the several shops, get in direct touch with the men and see them at work, and the men subsequently struck just as we had entered upon the inquiry as to wages and working conditions. It is but fair to say that our suggestion that we should meet the men in the shops directly was that we might from themselves learn what their complaints were, if any, and the grounds of such complaints. We thus have been unable to visualize the situation and find it quite impossible to arrive at any satisfactory conclusion as to a classification of the men.

A large number of agreements, entered into elsewhere, were produced to show that the wages paid here are sufficient. These agreements are with railways, shipbuilding yards, and some contract shops, showing a scale of wages in some cases higher and in some cases lower than that prevailing in Winnipeg. The employers object that such agreements cannot be relied upon as evidence that the wages paid here are unreasonable, without knowing the conditions prevailing in the particular place, and the circumstances under which they were entered into. They point that in some cases the employers may have been forced to agree to the scale demanded because of contracts of war material, and in other cases the employer was a public utility having the right to apply for leave to charge higher rates, and thus take care of the increased wages, as had been done in the case of railways. They point to the fact that they have no such redress, but that they have to sell their manufactured products in competition with others in the United States and Canada where no such wages or working hours prevail.

From the evidence before us we have come to the conclusion that on the whole the mechanics and skilled craftsmen employed in these shops are paid fair wages. To this general rule there appear to be some exceptions where the men are underpaid. The same may be said of the class commonly called Specialists. The exceptions in this class appear to be more numerous and the variations in rates of pay greater. In the case of laborers the general rate is 30c per hour. This rate appears to us to be too low under present conditions, and we would recommend a minimum of 32½c. per hour.

For overtime the prevailing rate is time and one-half, with double time for Sundays. This appears to be a fair and reasonable practice and should be continued.

Working Hours per Day

As to the number of working hours per day, we were unable to arrive at a unanimous conclusion. The present working day is ten hours with five hours on Saturday. The evidence disclosed that a reduction of the hours of labor from ten to eight as demanded would add at least twenty per cent. to the cost of production. The Chairman and Mr. Fisher believe that the reduction asked for would impose upon the local trade too serious a handicap as against their competitors in other parts of Canada and the United States, where the ten-hour day prevails. They also believe that when labor is so scarce and the necessity of attaining the maximum of production so great, the time is not opportune for recommending a reduction in the hours of labor, however desirable they might consider the change under other circumstances. Mr. Tipping, on the other hand, holds to the view that, notwithstanding existing conditions, the daily hours of labor in the metal trades is too long and should be reduced at least to nine hours.

During the progress of the inquiry several incidents took place to which we desire to make a brief reference.

At the opening of the proceedings we requested that all parties refrain from doing anything that would in any wise cause irritation, and that the employers refrain from any acts of discrimination against union employees.

The representatives of the employees charged that one of the employers, viz., The North West Brass Foundry, had discriminated against three union men—Adair, Neil and Chomisky, by refusing them employment.

The employers made a counter charge of intimidation against members of the union.

The first charge was that Mr. Adair, a brass moulder, and secretary of the Moulders Union, who had been in the employ of the Company up until the 8th of June last, was refused employment although the Company was at that very time advertising for moulders. The facts of Mr. Adair's case are these: He entered the employment of the Brass Company in September, 1917. In November several cases of lead poisoning occurred in the foundry, and amongst those who suffered from it was Mr. Adair. After his recovery he was re-employed by the Brass Company in February of this year, and it was stated to him at the time that the shop was an "open shop," and he agreed to accept employment in it upon that understanding. Some time after that he made a claim under the Workmen's Compensation Act because of the lead poisoning, and was awarded damages. In May and June, the Brass Company were carrying out certain changes in its heating plant. These improvements had been going on for some time, and on the 8th of June a notice was posted that the shop would be closed until further notice. Mr. Adair says that he asked the Superintendent how long it would be before the men would be required back, and was told that when they were wanted they would be sent for. He asked for something more definite, but the Superintendent refused to give any further information on the subject. In a short time afterwards other men were taken on, and Mr. Adair again applied for employment. He was then told that when he was wanted he would be sent for.

Man Susceptible to Poisoning

The answer which the Brass Foundry Company makes to the charge is that they did not object to Mr. Adair because he was a member and an active officer of the Moulders' Union, but because it appeared that he was susceptible to lead poisoning, and that the management of the Company, after consultation with their solicitor, and upon their solicitor's advice, declined to re-employ him. This statement was confirmed by the Company's solicitor.

Although the circumstances under which Mr. Adair was refused employment may excite in our minds a suspicion that the reason assigned for his non-employment was not the only reason, and that the management was actuated by other motives, we cannot, upon the evidence before us, find that the reason given for refusing to re-employ Mr. Adair was not the real reason. We do think, however, that the management might have shown more candor in dealing with Mr. Adair, and more consideration for the men, when it became necessary to close down the shop for repairs. It seems to us absurd to contend that the Superintendent could not have given an approximate date when the men would be required again. We have no hesitation in saying that he could have done so, and that the real reason for not telling Mr. Adair when he would be required again was that they did not intend to re-employ him.

The facts as to Neil and Chomisky are these:

Neil was dismissed and the other refused employment when he applied. We cannot find on the evidence that Neil was dismissed because of his membership in the union or that Chomisky was refused employment for that reason.

It was charged that Neil had threatened with personal violence one of the Company's employees who remained at work during a strike. While Neil appears to have acted indiscreetly and frankly admitted such to be the fact, the incident was too trivial to be made the subject of a serious inquiry.

Shops are "Open"

The metal trades shops in Winnipeg are and have always been what are known as "open shops"—that is to say, both union and non-union men have been employed in them indiscriminately. The employees for some reason came to regard The North West Brass Foundry, although nominally an open shop, in practice a union shop. While the inquiry was proceeding this Company put one of its employees, not heretofore employed as a moulder, to do moulder's work. The union employees in the shop objected and upon the Company refusing to stop him doing moulder's work, a strike was declared in that shop at a meeting held on or about the 8th July, to take effect at 10 o'clock in the morning of the 10th. At our request the representatives of the employees undertook to call the strike off and to keep the men at work until we had time to complete our investigation and make our report.

On or about the 17th July, at a meeting of the metal trade employees, a general strike was declared, to take effect on

(Continued on page 78)

Liability Clause in the Express Receipt

Binding Nature of the Contract or Receipt—Shipper Given the Option of Two Rates and an Opportunity to Recover More than the \$50 Limitation—Must Suffer Consequences if he Chooses to Ship at the Lower Rate

By J. E. WALSH

Manager, Transportation Department, C.M.A.

A Valuable Series

This is the first of a series of articles dealing with various problems affecting the relations of shippers and carriers which Mr. Walsh has promised to prepare for INDUSTRIAL CANADA. We have no hesitation in saying that members of the Association will derive advantage from following these articles closely, as they express the views of one who has made a close study of the transportation field for many years.

THE \$50.00 limitation in the express receipt is the source of much criticism, especially in case of loss on a shipment of greater value, when such has not been declared at the time of shipment. Apparently considerable misunderstanding exists as to what the contract or receipt covers, and the extent to which the companies are protected, even although subsequent investigation may show that they were negligent. That the contract applies even in such cases, there is absolutely no doubt.

Herbert C. Lust, of the Chicago Bar, on the law in "Loss and Damage Claims," at page 211, says:

Contracts for limited liability, when fairly made, do not contravene the settled principles of the common law preventing the carrier from contracting against its liability for loss by negligence.

The acceptance of the contract or receipt by the parties is binding. The shipper, by the tariffs on file, is given the option of two rates, and an opportunity to recover a greater value than mentioned in the receipts. If he, therefore, chooses to ship at the lower rate, and not avail himself of the right of greater recovery by paying the higher rate, and a loss occurs, he must suffer the consequences. Shippers do not have to declare the real worth of their goods, if they wish to ship at limited liability, and take the risk of recovery at very much less than the value.

To quote again from the above-mentioned authority:

Where the shipper has his choice of two rates, the higher carrying unlimited carrier's liability, and in "a fair, just and reasonable agreement" declares or agrees the value of his shipment is a certain sum and thereby secures a reduced transportation rate, he is bound by that declaration or agreement, estopped from claiming or recovering more than that value in case of loss of or damage to the property, and conclusively presumed to have known the governing tariff.

The United States Supreme Court has upheld this clause, and stated that unless the shipper declares the full value he cannot recover more than the liability assumed by the receipt given. Further, the shipper is not required by law to insure with the Express Company, but when he fails to do so he limits his right to hold the company liable for a greater

amount than the receipt names, or is provided for in the classification.

The merchandise rates approved by the Board of Railway Commissioners for Canada are based on a maximum value of \$50.00. This fact should be constantly borne in mind by shippers, as failure to do so may result in loss that will exceed the total cost of insurance for one or more years' business.

Whilst United States cases only have been referred to, so far as it is known the form of contract has been upheld in Canada.

Settlement of Claims

With regard to the settlement of claims and the law in respect thereto, the following communication from the late Chairman of the Board of Railway Commissioners, Judge Mabee, is interesting:

I beg to say that it is not open to a carrier, such as an express company, to give different treatment to different shippers. It is not a question of policy; the law prohibits discrimination. A small shipper is entitled to be treated in the same manner as a large shipper. It would be in direct contravention of the Railway Act if an express company extended favors to your firm because of the large traffic you favored it with, and did not extend the same favors to the smallest shipper.

You say that your contention is that they may pay more than \$50.00, if "as matter of policy they find it in their interest to do so." The law is quite to the contrary. You might as well say that if they found it in their interest to do so, they might charge your company lower rates, on account of the large volume of traffic, than they charge some smaller shipper. The provision of the Statute is not limited to "rates, despatch and the like," but is intended to cover, and does cover, all of the various transactions and dealings between the carriers and the shipper.

If the present form is considered not reasonable an appeal to the Board of Railway Commissioners for a revision is always in order, but until such times as it is amended or changed by that body, its conditions are binding on all concerned.

Conditions Objectionable

For years the Express Receipt was a drawn legal document intended to relieve the express companies from many of the liabilities imposed upon a common carrier. These conditions were so objectionable that the express companies, subject to the jurisdiction of the Parliament of Canada, were placed under the control of the Board of Railway Commissioners in July, 1906, by an amendment to the Railway Act. Shortly afterwards the companies applied to the Board for the approval of their standard tariffs. A general enquiry into express companies and their practices was considered advisable, and the Government appointed the late Geo. H. Shepley and Colonel W. S. Buell as counsel to assist in an enquiry into the express companies generally. Due to uncontrollable circumstances the investigation was not concluded until 1910. Capitalization, rates, classification, various forms of contract and services of different kinds were all carefully enquired into, and dealt with by the Board.

In regard to the old forms of contract or receipt, the then Chairman, the late Judge Mabey, among other things, said:

It requires no second reading of any of these contracts to see that they are grossly unfair. However, as these forms must all be abandoned, it is not worth while following further criticism of those now in use. The question is what would be a fair and proper form of carriage contract; not unduly burdensome on either side but fair and equitable between the parties. We have had the opportunity of going over the various features that should enter into a contract of this character, with representatives of all interested parties, and without repeating the reasons that we gave from time to time as the matter progressed, we have concluded that the form in Schedule "A" to the Classification will, upon the whole, be reasonable.

The form referred to has been slightly modified since, but no change has been made in the \$50.00 limitation clause. The Board, at the same time fixed the compensation of the companies, should they be required to assume liability in excess of \$50.00, as follows:

"Valuation Charges"

On merchandise. The liability of the company upon any shipment of merchandise shall be limited to \$50.00, unless a greater value is declared by the shipper and embodied in the receipt. Should the shipper desire that the company assume liability in excess of \$50.00, the following additional charges will be made upon such excess, viz.:

When the mdse. rate is \$1.00 or less per 100 lbs., 5 cents for each \$1.00 value or fraction thereof.

When the mdse. rate exceeds \$1.00 and not more than \$3.00 per 100 lbs., 10 cents for each \$100.00 value or fraction thereof.

When the mdse. rate exceeds \$3.00 and not more than \$8.00 per 100 lbs., 15 cents for each \$100.00 value or fraction thereof.

When the mdse. rate exceeds \$8.00 per 100 lbs., 20 cents for each \$100.00 value or fraction thereof.

It will thus be seen that the shipper is given the option of two rates, and that he is at liberty to elect which he shall pay. Although it is entirely optional with the shipper to declare the value, both our Railway Commission and the Interstate Commerce Commission have held that the carriers are entitled to notice in order that its care may be increased. The Interstate Commerce Commission has this to say:

In the case of shipments of extraordinary value, not only is the carrier entitled to notice of such value in order that its care may be increased, but it is also entitled to extra compensation for the increased liability and care. Under the law it is the duty of shippers of property of more than ordinary value to bill same at its true value in order that the legal rate may be applied. In the case of a shipper declaring a false value to secure a reduced rate, one of the penalties under this form of receipt is an estoppel by which he is precluded, in case of loss or damage, from denying the correctness of such value so given.

Tax on Canadian Shipments

At Present Exempt, this Traffic Becomes Subject to Three per Cent. Tax on the Haul in United States

Congress is getting the war revenue legislation into shape for final action, says the *Traffic World*. About the only change in existing law that the House will make, so far as transportation by rail or water is concerned, is the imposition of a tax on that part of a freight bill covering a shipment from Canada or other adjacent foreign country into the United States appertaining to the haul within the United States. At present the tax of three per cent. is not levied upon that kind of traffic. The treasury has held that the law does not

cover imports into the United States. Why such a holding was ever made cannot be imagined except that it was thought to be unjust to impose a tax on import freight bills so long as the constitution forbids taxes on export traffic. The ruling placed the shingle manufacturers of the north Pacific coast at a disadvantage in their competition with shingle men in British Columbia. The latter advertised the fact that the freight bills on their shingles were not taxable and they gave the benefit of the tax exemption in all competitive markets. The American shingle men bestirred themselves to the end that their congressmen insisted in having a tax provision relating to the American end of the haul written into the revenue bill by the House committee on ways and means, which had the initial burden of writing a measure to raise \$8,000,000,000 during the fiscal year beginning next July, or earlier, as to some items in it. The tax on transportation by pipe line is also to be increased from five to six and a half per cent. That, however, is not a great revenue raiser. It tends, however, to narrow the spread between rates on oil carried in tank cars and oil sent through the pipes. The first mentioned rate was increased 4.5 cents per 100 pounds upon which a three per cent tax is to be paid. The pipe line transportation, however, is to be taxed 6.5 per cent. General Order No. 28 did not increase the transportation, by pipe line rates.

Branch Line Absorption

New Lease of Life for Districts Served by Small Railways in New Brunswick

Five small railways in New Brunswick with a total length of one hundred and forty miles, have now become part of the Canadian Government Railways—a system of over four thousand miles, extending from the Sydneys to Winnipeg, and which, now the Quebec bridge is completed, has continuous rail connection between the Atlantic and the Prairies.

In these days of co-ordination of effort, the benefits the communities heretofore served by these branch lines, under separate management, will derive by being a part of one great system, are obvious. It is only necessary to recall the condition existing between Sackville and Cape Tormentine, or between Campbellton and St. Leonard a few years ago, and note the vast improvement made in the condition of the road bed, rolling stock, train schedules, and general efficiency which has followed their absorption into the larger plan of the Canadian Government Railways. Reconstruction work on all these branch lines is progressing rapidly, and it will be only a short space of time before their distinctive names will be a memory, and they become important feeders to the greater arteries of railway traffic.

The Moncton and Buctouche, Elgin and Havelock, Salisbury and Harvey, Hampton and St. Martins, York and Carleton Lines have, in their limited capacity, all served the excellent farming districts in New Brunswick their geographical names imply. There has been considerable lumber and pulpwood development. Other industries have also made some progress and the branch lines have assisted in marketing all these products. Along the line of the Salisbury and Albert have been considerable shipments of crude oil and manufactured plaster, and a movement is now on foot to develop the extensive shale areas. On the Moncton and Buctouche have been shipments of fish and building stone; the St. Martins, sand, gravel and gypsum, and it is reported that the latter commodity which has been dormant for the past few years, is again to be actively worked. The branches leading to the sea shore will, when more peaceful times arrive, develop summer tourist traffic, and the resorts thus reached share in the benefits of

new sources of revenue, with greater opportunities for entering the larger markets. The territories thus being brought into closer contact therewith by means of modern railway facilities, may confidently look forward to a new lease of life, and be more in touch with the prevailing spirit of progress and optimism so markedly in evidence in the Maritime Provinces in general.

New Officials

Promotions and Changes Made at Headquarters of the Canadian Pacific Railway Co.

Mr. George M. Bosworth has retired from the position of Vice-President of the Canadian Pacific Railway Co. to become Chairman of the Canadian Pacific Ocean Services, Limited, and the directors have appointed Mr. William R. MacInnes, Vice-President, to succeed him. Mr. Bosworth will be chief executive of Canadian Pacific Ocean Services, while Mr. MacInnes will have charge of all matters connected with the C. P. R. Co.'s traffic department.

Mr. W. B. Lanigan has been appointed freight traffic manager of the Canadian Pacific Railway Co., with office at Montreal. He will be in charge of freight traffic on all the Company's lines.

Cultivating Friendly Relations

Bathurst Lumber Company Entertained 5,000 of their Employees and Families at a Monster Picnic

A pleasing illustration of the cultivation of friendly relations between employer and employee was afforded last month in the case of the Bathurst Lumber Company. On August 10, the Company entertained its employees at a monster picnic. All expenses were assumed by the company and the men were paid for their time. About 5,000 people were in attendance.

Mr. Angus McLean, manager of the Bathurst Lumber Co., with Mrs. McLean, had charge of the arrangements and prepared an excellent programme for the day. The sports carried out included ball game, greased pole, three-legged race, nail driving contest, 100 yards dash, canoe tilting, log rolling contest, fat woman's race, half mile canoe race, tug of war, wrestling and boxing matches, wheelbarrow race and several other events.

Two dancing pavilions were erected on the grounds by the Bathurst Lumber Co., and were placed gratis at the disposal of the picnickers. One of the pavilions for square dancing, would accommodate about 200 couples and the other about 300 couples.

The Red Cross had a number of booths on the grounds and did a thriving business.

FOREIGN TRADE OF CANADA

(Comparison 1916, 1917 and 1918.)

	IMPORTATIONS.			Four Months Ending July.		
	Month of July.					
	1916.	1917.	1918.	1916.	1917.	1918.
Dutiable Goods	\$34,698,911	\$49,442,400	\$46,251,579	\$140,233,388	\$202,470,345	\$182,992,478
Free Goods	28,923,776	40,739,195	36,656,321	109,634,479	179,630,505	150,443,230
Total	\$63,622,687	\$90,181,595	\$82,907,900	\$249,867,867	\$382,100,850	\$333,435,708
Duty collected	\$11,071,100	\$14,241,047	\$13,738,784	\$46,063,507	\$60,528,738	\$55,989,545

EXPORTATIONS.

	Month of July.					
	1916—		1917—		1918—	
	Domestic.	Foreign.	Domestic.	Foreign.	Domestic.	Foreign.
The Mine	\$8,578,750	\$54,081,747	\$6,365,244	\$42,277	\$7,075,929	\$274,292
The Fisheries	2,570,358	1,432	2,290,327	12,697	2,146,964	81,445
The Forest	7,259,805	7,672	5,491,626	1,397	8,594,284	586
Animals and their Produce	9,546,186	135,182	19,213,497	246,377	13,838,389	383,229
Agricultural Products	38,285,309	506,875	38,744,606	394,450	19,434,676	45,677
Manufactures	38,264,136	804,979	104,649,862	1,896,641	51,455,590	958,459
Miscellaneous	459,726	99,453	610,986	256,533	473,615	221,965
Total Merchandise	\$104,964,270	\$55,637,340	\$177,366,148	\$2,850,372	\$103,019,447	\$1,965,653

EXPORTATIONS.

	Four Months Ending July.					
	1916—		1917—		1918—	
	Domestic.	Foreign.	Domestic.	Foreign.	Domestic.	Foreign.
The Mine	\$26,324,915	\$116,638,599	\$21,539,363	\$88,425	\$25,352,705	\$949,704
The Fisheries	6,146,490	8,591	5,229,545	62,903	6,269,632	122,599
The Forest	19,568,454	7,698	18,411,661	25,529	27,259,955	33,964
Animals and their Produce	29,419,691	1,314,841	43,436,664	901,766	39,270,951	1,072,683
Agricultural Products	145,769,563	1,486,264	179,850,213	3,131,698	100,936,738	373,233
Manufactures	119,824,138	2,737,310	237,480,303	6,592,776	160,195,841	4,515,386
Miscellaneous	3,292,054	433,769	1,906,925	801,523	2,407,014	551,862
Total Merchandise	\$350,345,305	\$122,627,072	\$507,854,674	\$11,604,620	\$361,692,926	\$7,619,431

Among the Industries

Under this heading are published items of news of current interest concerning the activities of Canadian manufactures. Information about changes of interest, enlargement of plants, and plans for future developments are always welcome, and are published free of charge, provided they should not be properly classified as advertisements

*Items prefixed with an asterisk are based on official information received in each case from the companies mentioned. Other items, while secured usually from reliable sources, have not the same authoritative origin.

ALBERTA

Bassano

The Imperial Oil Co. will erect a warehouse, and work will commence shortly.

Calgary

The Alberta Flour Mills have recently been granted a building permit, operations to cost about \$500,000.

Edmonton

Plans are drawn for a \$12,000 one-storey addition to warehouse for Massey-Harris Co., Ltd., head office, King Street West, Toronto, Ont.

Lethbridge

The contract has been let for a \$20,000 abattoir for P. Burns & Co.

BRITISH COLUMBIA

Beaver Cove

The Beaver Cove Lumber and Pulp Co. are erecting a pulp mill and contemplate the erection of a water power plant.

Burnaby

Work is to start on buildings and oil plant for the Burnaby Oil Co.

Eburne

Preparations for the rebuilding of the burned sawmill at Eburne are going forward.

New Westminster

The Timberland Lumber Co. are progressing favorably with the erection of a new mill on the south side of the Fraser River opposite New Westminster. The mill when completed will be 140 feet long by 40 feet wide.

A new industry for New Westminster is the Cut-to-Fit Lumber Co. The principals of the company look for a great building programme on the prairies this fall, and they also expect that there will be considerable local business, mainly in farm buildings. Combined with the great scarcity of expert carpenters, this will create a situation which will be particularly favorable for the cut-to-fit idea, which is designed to reduce to a minimum the necessity for expert labor in building frame structures. This plan has been in operation successfully for a number of years, but the company claims to be the first to introduce it in Canada. It differs from the ready-made house scheme, in which the houses are shipped in sections. In this case, the lumber only is shipped, but every piece is cut to the proper size at the mill, to fit a building of a certain design for which working plans are supplied, and all the farmer has to do is to nail it up.

Plans are in progress for a box factory for Lumber Products, Ltd., Brunnette Street.

Prince Rupert

Plans for the erection of a new cold storage plant in Prince Rupert have been drawn up. It will probably be located at Cow Bay, where a site is available. The building

planned is to be two stories, large enough to take care of a million pounds of fish, with capacity for freezing fifty tons of ice and storage for 450 tons.

Salt Spring Island

The erection of a cannery is contemplated by a syndicate.

Vancouver

Plans are drawn for a flour mill and grain elevator costing \$70,000 for C. P. Coles & Co., Ltd., Board of Trade Bldg. Storage and manufacturing office to be built also.

The Defiance Packing Co., 510 Hastings West, contemplate the erection of a cold storage warehouse.

The Robertson Iron Works are planning to erect an engineering plant.

The John Randuff Bull Co., Christiania, Norway, with representative at Vancouver Hotel, have secured a site, and contemplate building a factory, at a cost of \$40,000.

Plans are drawn for a \$3,000 addition and extension to machine shop for the Vulcan Iron Works, Industrial Island.

Plans are in progress for the erection of a \$25,000 fish-packing plant for Watson Bros., 141 Front Street West.

The B. C. Sugar Refining Co., Ltd., of Vancouver, which was the first industrial plant here to use fuel oil, is also to be the first to use pulverized coal, as the pulverizing and firing plant for utilizing the latter form of fuel is now being installed. This system has been successfully adopted on railways in the Eastern States as well as in a number of American industrial plants, and it is expected, in view of the increased price and threatened scarcity of fuel oil in British Columbia, that other industrial plants will adopt pulverized coal for fuel, thus increasing the market for coal mined in this Province.

It is reported that active steps will soon be taken to establish a plant in Vancouver which will manufacture woollen blankets, underwear, hosiery, and cloth. It is believed that the establishment of such an industry here would develop an extensive market.

Victoria

Plans are in progress for an extension to shipyards for Foundation Co., Ltd., Victoria, B.C.; head office, New York, U.S.A.

West Vancouver

The Nasmyth Lumber Co., 207 Hastings Street, West Vancouver, are contemplating the erection of a saw mill and \$7,000 flume. Also a box factory.

MANITOBA

St. Boniface

Contracts have been awarded in connection with the erection of a \$26,000, four storey-warehouse for the Western Canada Flour Mills Co., Ltd., 10th floor, Union Trust Building.

Winnipeg

Contracts have been awarded in connection with the erection of a \$27,000 mill for the B.B. Rye Flour Mills Ltd., Higgins and Sutherland Sts.

Contracts have been awarded in connection with the erection of a \$25,000 warehouse for the Swift Canadian Co., Ltd., Louise Bridge.

Contracts have been awarded in connection with the erection of an \$118,000 six-storey abattoir for Gordon, Ironsides & Fares, Logan and Trinity Sts.

Tenders are in for the erection of a \$14,000, two-storey warehouse for the R. Bell Engine & Thresher Co., Vincent and White Sts.

NEW BRUNSWICK

Fredericton

Plans are in progress for a \$7,500 furniture factory for Howard Rogers.

NOVA SCOTIA

Sydney

In connection with the erection of steel rolling mills to cost about \$5,000,000 for the Dominion Iron & Steel Corporation, 112 St. James St., Montreal, the following contracts have been awarded: Concrete work, Col. R. S. Lowe, care of company, Sydney; foundation, Bate, McMahon Co., Central Chambers, Ottawa.

Whycocomagh

A steel and frame plant for the manufacture of silicate brick is being built here. Over 1,000 people will be employed, and the company has made plans for a model town.

ONTARIO

Arnprior

Work has started on a one-storey factory for F. C. Huyck & Sons.

Arthur

Excavating to start soon for a flax mill costing \$7,000 for Canada Flax Mills, Ltd.

Port Arthur

A slasher mill costing \$6,000 for the Port Arthur Pulp & Paper Co., will be built.

Barrie

Contracts have been awarded in connection with the erection of a \$15,000 flour mill for S. J. Fisher, at 58 Collier St.

Brampton

A \$12,000 factory extension for Hercules Rubber Co. will be erected.

Brantford

The contract for repairing plant of the Waddel Reservoir Co., which was recently damaged by fire, has been given.

Carleton Place

Contract for knitting mill costing \$25,000 for Hawthorne Mills Co., Ltd., has been awarded.

Elmira

Contract for addition to factory costing \$30,000 for the Elmira Rubber Co., has been given.

Hamilton

Contract has been let for addition to factory costing \$20,000 for Acme Stamp & Stencil Works, 34 Sydney St.

Contracts have been awarded in connection with the erection of a three-storey addition to factory costing \$74,000 for Dominion Foundries, Ltd.

A permit has been granted the Ford-Smith Machine Co. for the erection of a \$30,000 factory.

Ingersoll

The Ingersoll Machine Co., King St. West, contemplate an extension to present plant at a cost of about \$60,000.

Kitchener

A \$40,000 addition to rubber factory of Canadian Consolidated Rubber Co. is to be built.

The general contract for \$18,000 latch and boiler house for the Lang Tanning Co. has been awarded.

Lindsay

A \$25,000 addition to the factory for Boving Hydraulic & Engineering Co., Ltd., Wellington St., will be erected.

London

Tenders will shortly be called for erection of weaving plant for Hall Dent Glove Co., 286½ Dundas St.

Plans are in progress for a factory for Penmans Ltd., 197 Dundas St.

A \$20,000 factory addition will be made for Peerless Hosiery Co., Ltd., Adelaide St.

Niagara Falls

The National Abrasive Co. will erect a plant here, and operations will commence at once.

Orangeville

A \$40,000 extension to plant is contemplated by Dods Knitting Co.

Ottawa

The Imperial Oil Co., Catherine St., contemplates the erection of office building and addition to warehouse.

Thorold

The Peerless Pump Co. contemplates the rebuilding of plant recently destroyed by fire at an estimated cost of \$200,000.

Toronto

A \$15,000 addition to plant is contemplated by the British Forgings, Ltd.

The Toronto Carpet Manufacturing Co., 1179 King St. W., contemplates the erection of brick addition to factory at an estimated cost of \$25,000.

The Canada Metal Co. are erecting a two-storey steel and iron addition to munition plant, costing \$5,500.

The City Architect has granted a permit to the Dominion Shipbuilding Company, foot of Bathurst Street, for the erection of a machine shop to cost \$75,000. The building will be used for war orders.

Contract has been awarded for 120 ft. x 160 ft. extension to foundry building on Lansdowne Ave. by Canadian Allis-Chalmers, Ltd., Toronto.

The Ideal Bread Company has been issued a permit for the erection of a factory to cost \$75,000.

C. F. Till, 34 Victoria St., has the general contract for a \$3,500 two-storey brick addition to machine shop, for the Lancashire Dynamo & Motor Co., 107 Duke Street.

The north wall is going up for a one-storey factory costing \$40,000 for Hamilton Gear & Machine Co., Van Horne Ave.

Building permits issued by City Architect Pearse recently were as follows: Martin Corrugated Paper Box Co, 353 Pape, concrete tank, \$2,000; Smith, Rae, Greer, factory on Ossington Ave., \$25,000; W. H. Banfield & Sons, new machine shop, 372 Pape Ave., \$10,000; E. Kelvington, one-storey showroom and workshop, south side St. Clair Ave., \$2,500; Eastern Children of Israel, one-storey brick addition to Sunday School, 177-9 Berkeley St., \$1,500.

Wellsand

Foundations are in for a one-storey melting building, forge shop, boiler house, producer house, etc., costing \$150,000 for the Dillon Crucible Alloys, Ltd., 122 Helles Ave.

A pump house, mill, addition to machine shop, etc., costing \$56,000 for Page-Hersey Iron Tube & Lead Co., Ltd., are to be built.

Weston

K. & S. Canadian Tires Ltd., 527 Yonge St., Toronto, contemplate making extensive additions to their present plant.

Windsor

The City Council has approved the sale of factory site on Howard Avenue for the erection of a 100-barrel flour mill. A by-law authorizing the transaction will be submitted at an early date.

Wingham

The Farmers' Fertilizer Co. will erect a fertilizer plant to cost \$8,000.

Woodstock

Bond & Lampman, 836 Water St., have the general contract for \$18,000 factory for the Canadian Hosiery, Ltd.

QUEBEC**Drummondville**

The general contract for a \$100,000 match factory for the Drummondville Match Co., has been awarded.

Jacques

The general contract for extension to tobacco factory costing \$25,000 for John H. Duys, New York, N.Y., has been awarded.

Lachine

Contract for \$25,000 addition to shell factory for Munitions and Machinery, Ltd., has been awarded.

Contracts have been awarded in connection with the erection of a three-storey, reinforced concrete and brick manufacturing plant costing \$600,000 for Crane Co., 836 South Michigan Ave., Chicago, Ill.

La Tuque

Brown Corporation, 56 St. Peter St., Quebec, contemplate the erection of a paper mill costing \$20,000,000.

Montreal

A four-storey addition is being made to factory costing \$30,000 for Hampton Mfg. Co., Ltd., Elmira Ave.

Contracts have been awarded in connection with the erection of an extension to factory for the Canadian Consolidated Rubber Co., Ltd.

Contracts have been awarded in connection with the erection of a \$45,000 factory for Lamontagne Ltd., 338 Notre Dame St. West.

Reid Brothers, 511 St. Catherine St., have been given the general contract for three refrigerator buildings to cost \$40,000 for the Harris Abattoir Co., Ltd.

Williams & Wilson, Ltd., 320 St James St., are erecting a \$125,000 factory and office building.

Contract has been awarded for \$10,000 three-storey factory for Geo. W. Bithell, 773 St. Lawrence Blvd.

Quebec

Excavation has started on a \$12,000 four-storey citadel brick factory for J. A. Dery, 14 St. Famille St.

St. Jerome

The Regent Spinners, Ltd., St. Marie St., are contemplating the erection of a \$40,000 brick factory.

St. Remi

An addition to factory costing \$16,000 for W. Clark, Ltd., 83 Amherst St., Montreal, is being made.

Three Rivers

St. Maurice Foundry Co., Ltd., contemplate the erection of a \$15,000 extension to plant.

Verdun

The general contract for \$30,000 addition to factory for the British Munitions Co., Ltd., King's Park, has been awarded.

SASKATCHEWAN**Moose Jaw**

An abattoir costing \$125,000 for Gordon Ironsides & Fares is to be erected here.

North Battleford

A cold storage plant for the Saskatchewan Co-operative Creameries, Ltd., head office, Regina, Sask., is to be erected.

Prince Albert

A \$100,000 packing plant is being erected by P. Burns & Co., Ltd., West Calgary.

A Double-Barrelled Fuel Saving**A New Use Found for Water-Gas Tar,
One of the By-Products in the Manu-
facture of Carburetted Water-Gas**

Various suggestions have been made looking toward the utilization of low grade coal dust or screenings as an industrial fuel. Most of these contemplate the use of this material in briquette form; but occasionally it has been pointed out that if a suitable liquid binder could be developed, the coal-dust could be mixed with it, and delivered to the fire-bed loose, in much the same way as is ordinary pea-coal. The difficulty has been that of obtaining a suitable liquid. It must obviously be an inflammable one. At the same time it must have a high boiling point; for if it vaporizes at a temperature notably below that of coal combustion, it will boil out of the mixture and the dry dust left on top of the fire will be blown off by the draft or will fall through the grate. Finally, for convenience in handling, the liquid must be of rather low viscosity. Such a liquid has not previously been available. But it has now been observed that water-gas tar, one of the by-products in the manufacture of carburetted water-gas, meets all these requirements. If the hope of utilization thus held out is realized, a double advantage will be reaped; for not only will vast mountains of anthracite culm accumulated during the past century become available for use as fuel, but a stable demand will be established for a by-product which within the past three years has sold in quantity under contract at as low a figure as two cents per gallon. The process is covered by a recent patent, No. 1,260,286.—*Scientific American*.

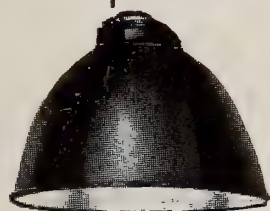
Some New Patents**A List of Interesting Devices which Have Recently Been
Granted Canadian Patents**

The following is a list of Canadian patents recently issued through the agency of Messrs. Ridout & Maybee, 59 Yonge Street, Toronto:—Alfred Matthews, suction blower; Sheet Metal Products Co., of Canada, Limited, ash sifter; Lucius M. Hall, lock; Eduardo Murphy and Americo Anzulovich, earth-boring machine; Stanley Evered and Charles Willmott, fasteners for casement windows and the like; Abel Nordstrom and Carlos A. Oberg, drying apparatus; Wm. S. Dignum, hair-cutting device; Henry F. Brown, apparatus for cooling, humidifying and filtering air and the like; John W. George, rotary engine; Sidney C. Vinen and Charles Johnston, centrifugal concrete pole machine; Stuard D. Simpson and Fred. C. La-Griee, holder for use in fitting doors; Acme Stamping and Tool Works, Limited, cable clamps.

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No. 6147



No. 8101
No. 8103



No. 5685

Findings in Winnipeg Metal Workers' Case

(Continued from page 68)

the 22nd July. We were informed that this course had been resolved upon under the mistaken impression that we intended only to report conditions unaccompanied by any recommendations. At a meeting on the 19th July, we made it quite clear that we proposed to not only report the conditions as we found them but to accompany our report by any recommendations that we believed to be justified by the facts disclosed. We earnestly urged the employees' representatives to use their influence to prevent a strike, and they undertook to advise the men to wait until the inquiry had been completed and our report made. At a meeting held the following day the employees, however, resolved to go on with the strike. Accordingly, on the morning of the 22nd July, a general strike took place and is still on.

Contention Not Well Founded

The metal trade employers in this city have hitherto refused to recognize unions of their employees or to collectively bargain with them, and one of the reasons given for not doing so was that employees did not treat such bargains as binding. In view of this contention, we regard it as doubly regrettable that the employees should have adopted a course which might lend color to the employers' contention. We do not believe the contention is well founded. We believe that employees do as a rule respect their collective bargains. The fact that occasionally such agreements are broken is not a reason for refusing to enter into such agreements any more than the breach by an individual of his agreement should be treated as a reason against individual bargaining.

We find that in the larger contract shops there exists an atmosphere of suspicion and distrust between employer and organized labor. It is quite impossible to say which party is at fault. If the real cause could be ascertained it would probably be found that both parties had contributed to it. The real purpose of the present movement on the part of the men is, we believe, to secure recognition of the unions, but until the present deep-seated distrust of organized labor is removed from the minds of employers, we believe the purpose to be unattainable.

On the whole, we think the relations between individual employers and their men to be fairly satisfactory, and that as a rule the men are treated with kindness and consideration. The fact that some of them have retained the same men for periods ranging from 5 to 35 years can bear no other construction. All the employers have repeatedly expressed their willingness to meet their employees either through craft committees or individually and to comply with any reasonable demands either as to wages or working conditions. We can see no reason why they should not meet a joint committee of all their employees. We believe that a meeting of the several employers with such committees and a frank and free discussion and interchange of views might go far to satisfy the men and to remove the desire to secure expression of their views through their union organization. Entertaining as we do these views, we recommend the employers to abandon their objection to meeting a committee appointed by and representing collectively all their employees. It is our recommendation that the union organizations permit these committees to be formed and conduct their negotiations without interference or direction. If these recommendations are adopted, we confidently hope and believe that satisfactory wages and working conditions can be established in all the contract shops and a better atmosphere created all round. The adoption of these recommendations would, we believe, go far to solve the present difficulties and we can see no other solution.

Labor Unrest Detrimental

The unrest which has prevailed in labor circles for the past few months has operated not only to the detriment of both employers and employees, but to the injury of this whole community. Two of the three contract shops under review produced evidence to show that they had been offered very large orders for war munitions, which they had to refuse because they could not, in view of the unsettled conditions of

labor, assume the risk of obligating themselves, either as to the price for the work or the time for completion, with the result that the orders went to centres where more settled conditions prevail.

We have not dealt specifically with the automobile shops for the reason that these shops are all small and relatively unimportant and wages for skilled mechanics in them are well maintained by the keen competition between them for such help.

We regret that we have nothing more concrete to offer as a solution of the existing unrest, and that as we write this report, the men are on strike; but we have the consolation of knowing that we spared no effort to bring the parties together.

All of which is respectfully submitted.

Dated this 2nd day of August, 1918.

(Sgd.) T. G. MATHERS, Chairman.

(Sgd.) GEO. FISHER.

(Sgd.) F. G. TIPPING.

Since the publishing of the above report, upon one of the shops obtaining an injunction restraining the workmen from the manner in which they were conducting the picketing of their plant, the Trades and Labour Council of Winnipeg called upon all affiliated unions to vote on a general "walk out," the returns to be in the hands of the Secretary of that organization on Wednesday, August 21st. However, fortunately, the general strike threatened did not materialize and as the striking workers in most of the shops have agreed with their employers upon the rates of wages and conditions by direct negotiations between the two it is likely that the injunction will be withdrawn and no general strike will result.

Welfare Work in British Munition Plants

(Continued from page 64)

war refuses to tolerate on the part of the employee slackness and "ca'-canny" practices, so it frowns on indifference on the part of the employer to the welfare of his work-people. The workman is more than a peculiarly ingenious machine: he is not to be standardized. He is an individual, and to get his best efforts his individual welfare must be considered. He must be decently housed; he must have proper intervals for rest and recreation; he must be adequately nourished; his working conditions must be made satisfactory. Above all, he must somehow be induced to put his heart into his work. To secure such a result, relations between management and men should be made as human as possible. One hears much of morale in the trenches; but in the factory, too, morale is almost as important, and welfare work can do much to maintain it.

Such ideas are by no means new. Long before the war some intelligently managed companies carried them into practice. The novelty is this: that a great state, forced to produce at an unheard of pace, should inaugurate welfare work on a national scale—and with the most satisfactory results. For welfare work of the sort here described *does* increase output. The testimony of committeemen and manufacturers leaves no room for doubt on that score. How far the lessons of war and war production can be carried over into the period of reconstruction, when cost will be a more important factor than speed, remains to be determined. Experience before the war as well as the excellent results obtained during the war give ground for hope that welfare work in the era of peace and rebuilding may prove an economic, as well as a social, success.

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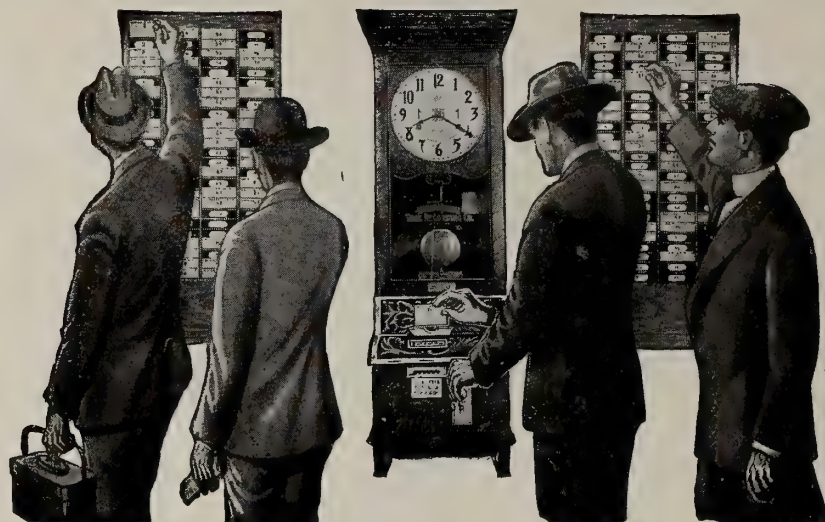
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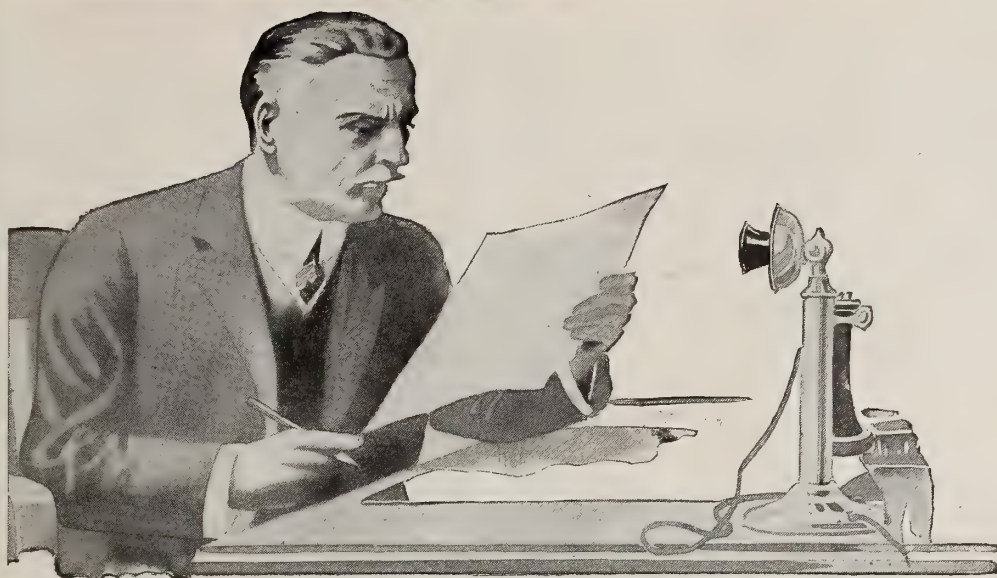
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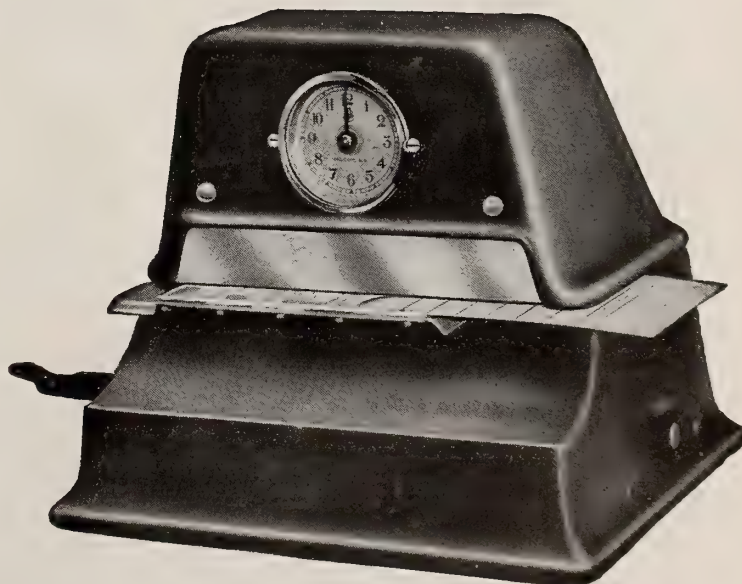
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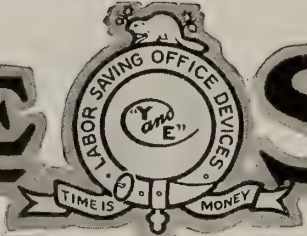
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The Cost Accounting Systems of Manufacturers are Faulty—Depreciation a Cost Charge Frequently Omitted—Ninety per cent. of Manufacturers do Business Without Knowing Accurately Their Production and Operating Costs—Chartered Accountants Should be the Propagandists of Better Systems and Methods of Accounting

By JOHN C. KIRKWOOD

IF the Canadian Government should decide to investigate the operations of boot and shoe factories, for example, to ascertain the nature and extent of their profits, the question arises: Will the various accounting systems of the makers of footwear assist or hinder the investigators? The examinations that the Canadian Government has made have revealed the existence of unsatisfactory accounting methods, just as have the investigations made in the United States. When the milling industry of the United States was officially investigated, those making the examination of the books of account said in their report:

"Great difficulty was experienced in obtaining accurate figures because of the unsatisfactory manner of some companies in their record-keeping. Even for the larger concerns it was often impossible to secure complete data, and this was generally true of the smaller mills investigated. In fact very few mills were found who kept their records in a manner to show the actual and complete cost of making and selling their production of flour."

If the foregoing is true of a big industry in the United States, where cost-finding and efficiency have been taught and practised to an extent far greater than has been the case in Canada, how much more pertinent is this condemnation of methods of record-keeping applicable to Canadian industries and to individual firms!

Are Chartered Accountants at Fault?

Limited liability companies and large corporations are in the habit of having periodical audits made of their books of account by chartered accountants, yet in spite of this there is little or no standardization of book-keeping methods. The principles of accurate book-keeping are observed, but the application of any standard or near-standard system of accounting methods, designed to produce certain specific revelations, would seem to be a thing apart from the auditor's business.

I talked with a chartered accountant on this matter, not with any superior knowledge on my part, but with inquisitiveness. I felt that it was possible to devise a standard cost system applicable to practically all classes of industries, and the man I talked with was at first inclined to challenge the feasibility of the universal employment of a standard cost system. "Take two silverware firms," he said, "I have served two such concerns in Toronto, and the system used by The Standard Silver Company is quite different from the system used by the other. They have different ways of running their business." But when I said, "Suppose that these two concerns were merged, and that each retained its own factory and staff unchanged, the accounting system for both concerns would have to be standardized, would it not?" and he admitted that it would, and that devising an accounting system applicable to the separate factories would be quite a simple matter. And then the big fact came out that the difficulty all along the

line is a human one, and not the devising of a standard cost-finding system; nor the application of such a system to industry in general and industries in particular.

"Different men and firms have different ways at looking at the same thing," this chartered accountant said, "Take the item of depreciation," he said. "You might think that this item presents no special difficulties, but I can tell you out of my experience that many firms make no adequate provision for depreciation, or, at any rate, have no special depreciation account; they just build up a reserve, and hope that depreciation of plant and equipment will be cared for there." Yet in the calculation of production costs, depreciation is a cost-factor, and generally admitted to be so. It is obvious that where no depreciation account is included in a firm's system of records, production costs are likely to be deficient—lower than they ought properly to be.

The Taxation of Profits and Incomes

When the Governments of the United States and Canada began their investigations into the costs of certain industries, and when legislation was enacted to have profits taxed, manufacturers everywhere suddenly began a revision of their production and operating costs, and the new "loading" of these costs becomes humorous when production and operating costs of previous years are set alongside. In the case of one industry in the United States the Government, through the designated Controller, issued instructions or explanations as follows:

"Actual proven costs of production shall constitute all proper items of operating, maintenance and marketing. . . . With reference to the term 'proven expense,' it must be realized that no abnormal or unnatural charges will be allowed, and that past history of expense will be taken into consideration together with proper practices by others (in the same line of business)."

One concern that had in 1917 one of the best years in its history suddenly discovered that it had made no money that year—just a paltry \$5,000. This concern has a pay-roll exceeding \$100,000 a year, and has grown from small things to great, yet in its best year it made no money! The explanation, of course, lies in the fact that it had been omitting from its costs of operation classes of costs that may properly be charged as costs, and that these costs, including a sizable amount for depreciation, had been charged in goodly sums against the operating costs of 1917. The presumption is that this practice is or has been common everywhere in Canada: namely, the revision of the essential factors of cost, and the inclusion in the cost-of-producing-and-operating records of previously-omitted factors.

Whether or not the Government of Canada will institute new and many investigations into the operations of firms,

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and in all other principal centres

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corporations or industries, the fact is clear that all business concerns should be able to provide, on demand, absolutely accurate and satisfactory records of the cost of producing and operating; and must, in their own interests, be able to show a net profits record that shall be just to themselves and to the Government. But how can a right profits record be prepared without there first being ascertained the costs of production, maintenance and marketing? Many firms have been showing a record of net profits in excess of what should be shown, and have been paying taxes on profits in excess of what they ought to pay; which means that they are paying dearly, and yearly, for their defective cost-of-production-and-operating system.

The Costliness of Self-Content

The singular thing—or is it singular?—is that almost every president or general manager of a factory, financial institution, public service corporation, retail business, or small shop will assert that his book-keeping system is quite satisfactory and that it needs no overhauling. And if the president or general manager should have any misgivings, his head book-keeper has none. It is just here that peril lies. Pride goeth before destruction and a haughty spirit before a fall—a truth that many a manufacturer and many an institution has had verified by bitter experience. In Toronto a certain loan and debenture corporation came to grief this year because of defective records and inspection—auditing, if you like the term better. Elsewhere a firm of machine-tool makers was nearly ruined because of its inability to compete with another firm; and when everything was known, it was found that the more successful firm—a much younger and less financially-strong firm—had devised a machine that cut down operating costs by a big percentage. For a long time the older and stronger firm emphatically denied that its youthful rival could make and sell at the prices at which it did sell; they had, so they said, checked over closely every factor of cost, and found no place where material reductions in producing and operating costs could be made. The chief factor of cost, time, was not reducible, it was asserted. Yet it was just there that the younger firm gained its great advantage. It had devised a machine that eliminated costly skilled human labor to the minimum.

Some years ago in Ontario a man that everyone thought rich and successful had to make an assignment; a bank of which he was a director failed, and the double liability obligation required this man to raise \$50,000—a sum that he was unable to provide. His financial collapse was complete. This man owned a general store, a quarry, a flour mill and a farm. In the examination into this man's affairs following his assignment, it was discovered that for fifteen years his general store had made good the deficits of his mill, farm and quarry. Because this man had not a good accounting system—one filled with illumination—he maintained leaky enterprises. All the time he basked in a fool's paradise, and for all his after years, until he died, he was a broken and humiliated man, and his family continue to suffer because of the husband's and father's indifference to accounting methods which would reveal department costs and all factors of cost.

Edward N. Hurley, "Hurry Up Hurley," as he has come to be known, chairman of the Shipping Board of the United States, says:

"Intelligent cost accounting lies at the basis of efficient management. . . . Goods cannot be priced properly unless cost is known. The lack of an adequate accounting system in a factory is like the lack of a compass on a ship: it makes it impossible to direct business intelligently and scientifically. At the present time (1916) it is estimated that 90 per cent. of the manufacturers of the United States are pricing their goods arbitrarily; either upon a basis which will get rid of the goods as soon as they have been manufactured, or upon the

basis of what their competitors are charging. . . Cost is the fundamental factor to which every manufacturer who expects to remain permanently in business must return as the only sound basis upon which to figure his prices."

Mr. Hurley did not guess at this 90 per cent. calculation. When he was chairman of the Federal Trade Commission of the United States he had made an investigation into the businesses of 260,000 firms, and 200,000 of them had no method of determining cost. The record goes on to say that 100,000 of these firms did not earn a penny, and little, if any, provision had been made for depreciation. In another survey of a national industry it was found that twenty-seven large corporations, representing an investment of \$12,500,000, and annual sales of \$8,000,000, had earned only three per cent. on the capital stock, and altogether they had charged off only \$69,000 for depreciation! In the face of these authentic figures, what can be said by manufacturers as a class in defence of their self-contentment?

Correcting a Wrong Situation

What can be done to arouse our Canadian manufacturers out of their complacency in regard to their accounting systems? That they must soon or late revise their accounting systems to have cost factors fully revealed goes without saying. Ten years hence hundreds of Canadian manufacturers will have revised their accounting systems—the systems that they have been using for years and that are being used right now. Ten years hence these systems, acclaimed now as being thoroughly satisfactory and fully revealing, will be laughed at as crude and grieved over because they were costly; yet to-day, thanks to prevalent obtuseness, the accounting systems now in use in thousands of factories are being considered as perfection. What must be done to persuade presidents, general managers, directors, and head book-keepers to submit their present accounting systems to the acid-test of thorough examination by those competent to diagnose systems in use and prescribe better systems if a better system can be installed.

Is a Standard System Possible?

Here arises the question: Is there any universally-approved standard system of accounting in its application to the costs of producing and operating? The answer is, No! Yet an approved standard cost system, of general application, has been devised—by the United States Federal Trade Commission, when "Hurry Up Hurley" was its chairman. It cannot be said, however, that this system is universally approved—this because it has not been universally installed or universally investigated. As a matter of fact, the efficacy of this or any standard system has been denied, will be denied and is denied, by chartered accountants, manufacturers and head book-keepers! That the earth is round was denied at a time in the world's history. That wheat would grow in Western Canada was denied by experts—with a demonstration. That a general European war was possible was denied by many who still live. That conscription in Great Britain or in Canada or in the United States could possibly be was an outrageous suggestion—some months ago. That the suggestion that their businesses were not earning a penny was too silly to be refuted was the attitude of 100,000 firms in the United States whose businesses upon investigation showed that not a penny was being earned. That their systems of accounting and cost—and profit—finding are deficient and, therefore, costly, is likely to be denied by 90,000 out of any 100,000 Canadian manufacturing firms canvassed for an expression of opinion. That the chartered accountants of Canada or the chartered banks of Canada should do any thing to correct an unsatisfactory state of affairs, in matters pertaining to ac-

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Capital Authorized	- - - -	\$ 25,000,000
Capital Paid Up	- - - -	14,000,000
Reserve and Undivided Profits	- - - -	15,000,000
Total Assets	- - - -	360,000,000

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counting methods, in respect of their customers—the manufacturers of Canada, and the retailers, also—is a suggestion that will probably have prompt rejection.

Edward N. Hurley has made a name for himself as a speeder-up of wrong or lagging situations. We have not many men of his type in our Canadian public affairs. The postmen of Canada and other discontented workers who applied to Ottawa for the expeditious handling or consideration of their grievances and demands encountered a characteristically Canadian attitude—a complacent, procrastinating spirit in those elected to be the public's servants. It is true that there are exceptions to this general condemnation; there are men in Canadian public life who face situations promptly and with full energy, and get things done. Yet the fact is true that we in Canada require explosions to disturb us. It is one of our inherited national traits to bungle through, without undue haste and without much regard for efficiency.

Compelling the Installation of a Sound Cost System

What I have in mind is that the chartered accountants of Canada devise a standard cost system for Canadian manufacturers, and when this has been done, that they should become energetic propagandists of this system—this by public advertisement. When they have devised a standard cost system, they can go to the Canadian Bankers Association and solicit its assistance in having our Canadian manufacturers install the standard system for ascertaining production and operating costs. The Canadian Bankers Association can put instant and compelling pressure on our Canadian manufacturers by insisting that before credit is granted every applicant for credit must install the standard cost system. By this means we shall not have to wait for ten years to get the new day and conditions that I look forward to.

The compulsory requirements need not be made harsh in their application; manufacturers may be given a period of three years after a certain date to adjust their accounting methods to the requirements of the approved standard cost system. In this way there will be avoided unwelcome disturbances, and minds and methods can be prepared for the change.

Federal Trade Commission's System.

If it still be denied by accountants and head book-keepers and others with opinions to offer that a standard cost system is an absurd suggestion and quite impracticable, I have to refer them once more to that class of persons and minds that denied the rotundity of the earth, and to the standard cost system put out by the Federal Trade Commission of the United States. If it still be denied that a standard cost system for industry in general or industries in particular is just a pipe-dream, I would point the scoffers to the standard cost system put out by the United Typothetae of America, which system is in operation in hundreds of printing plants, in the United States and in Canada, and is being adopted by hundreds of new printing offices every year. If the records pertaining to the devising and feasibility of universal application and installation could be consulted, it would be found that there were hundreds of fine men who denied ten years or so ago that anything like a standard cost system for the printing industry was possible, yet who to-day are the ardent champions of the system that has been devised and put into operation. It is a poor compliment to the mind of man and to the minds of chartered accountants to declare that a standard cost system for industry is an impossibility.

New ideas are almost always resisted and jeered at—this by those who will later on employ them. When you see any man ridiculing the suggestion of the seemingly impossible

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thing—such as flight by a heavier-than-air machine—have tolerance, and let time and education do their perfect work. It may be just now a seemingly absurd thing to expect the chartered accountants, as an organized body or the chartered banks of Canada as an organized body to concern themselves with any educational or beneficial work for their customers' welfare; but the time is even now close at hand when the true light will break in on darkened minds, and when these two classes of business interests will co-operate for the good of business in general; and if and when they join forces for the betterment of the conduct of business by retailers, manufacturers, corporations and others who serve the public directly or indirectly, it will be because of no altruistic motives but because it will be a paying proposition.

In the meantime it is boldly declared that there is urgent need right now for better accounting methods—more revealing accounting methods—in our Canadian factories and other classes of business enterprise, and the plea is made that when the time or occasion comes for a man with authority to give a decision on the matter of a revision of his present accounting methods, as these relate to the costs of production and operation, he will have the open mind that speeds on, not obstructs, the progress of Canadian business.

The Laurentide Co.

Big Pulp and Paper Concern Reports Increased Earnings for Last Fiscal Year

So far as total earnings are concerned the Laurentide Company's statement for the year ending June 30, 1918, stands out well ahead of the previous year, for the amount shown from pulp and paper, lumber and interest on investments is \$2,593,834, as compared with \$2,220,660 from the same sources in 1917, an increase of \$373,174, or as compared with the \$1,244,283 of 1916, an increase of \$1,349,551, or more than double. The extraordinary figures of 1917 should be taken into account in comparing the 1918 record, for it was a hard year to beat.

Coming down through the different stages of deduction, interest charges call for \$112,000 more this year, and the reserve for depreciation is set at \$155,000 more, which does not necessarily mean that anything like this sum is deducted actually from the value of the company's assets. A portion of the increased dividends (from 8 to 10 per cent.) that were not chargeable against 1917, brought this item in 1918 to \$96,000 more, and left the net surplus for the year at \$744,655 as compared with \$856,011 in 1917, and \$149,822 in 1916. Figuring this out on the basis of amount available for dividends on the common stock of \$9,600,000, the percentage is 17.76 for 1918, as compared with 17.9 for 1917, and 9.56 for 1916.

Meeting Its Obligations

Apparently the Grand Trunk is meeting its obligations, as is shown by the following quotation from the *Financial Times* of August 10th, 1918:

The Grand Trunk Railway on August 1st, paid out of earnings \$2,000,000 2-year 5 p.c. collateral gold notes issued in 1916 and offered by Blair & Co. at 98½ and interest.

The Company on November 1, 1917, also paid off \$4,000,000 two-year notes issued in 1915, making a total of \$6,000,000 paid out of earnings during the past year and liquidating all outstanding notes offered in New York by Blair & Co.

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Paid-up Capital	-	-	-	-	-	\$ 7,000,000
Reserve Funds	-	-	-	-	-	7,421,292
Total Deposits (May, 1918)	-	-	-	-	-	113,000,000
Total Assets (May, 1918)	-	-	-	-	-	144,000,000

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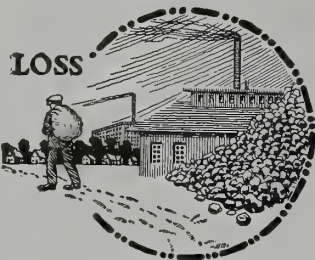
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The Tale of the Tracks

LAST Winter a certain manufacturer, observing many unaccountable footprints in the snow leading to and from his coal pile, investigated, and discovered that nightly thefts of coal were taking place and that he was "fuel supplier" for some of the houses in the vicinity of his plant. It did not take him long to figure that a

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Canadian Locomotive

Profits for 1917-18 Were Slightly Under Those of the Previous Year

The annual statement of the Canadian Locomotive Company may be taken to indicate a continuation of business on a scale equal to if not greater than shown in the last report, although there was a decline in profits from \$721,254 to \$677,936. In fact, that there has not been a greater shrinkage in the net income during a period of sharp readjustment of production costs and raw material prices may be regarded with considerable satisfaction by the shareholders. At the same time there is also borne out the argument that industrial concerns generally have passed "over the top" so far as the big profits of the war period are concerned.

After taking away \$90,000 for interest charges, \$567,937 was left. Subtracting \$105,000 for preferred dividends the sum of \$462,937 remained, which was equal to 23.3 per cent. on the common stock of \$2,000,000. Out of the residue, however, \$15,000 was allotted to sinking fund, \$100,000 was applied to depreciation reserve and \$25,000 to special replacement, in all cases the same as in the previous year. Six per cent., or \$120,000 was paid in common dividends, and a balance was brought forward of \$222,938. As the previous balance was \$706,479, the sum carried forward into the current year was \$929,417.

Minimum Wage Board

Personnel of the Board Formed under the Provisions of the New British Columbia Act

The Attorney General for British Columbia has appointed Mr. J. D. McNiven, Deputy Minister of Labor; Mrs. H. G. McGill, Judge of the Juvenile Court in Vancouver, and Mr. Thomas Matthews, also of Vancouver, as the personnel of the Minimum Wage Board for the administration and the carrying out of the Minimum Wage Act passed at the last session of the British Columbia Legislature. Mr. McNiven will act as Chairman of the Board. The B. C. Minimum Wage Act is modelled largely after similar legislation adopted last February in Manitoba, the principle point of difference being that the Board in Manitoba is composed of five members, the Chairman being a Government appointee, the other members being two representatives of manufacturers and two representatives of labor, whereas the British Columbia Board contains only three members, no representation being given to employers on the Board.

China Making Pencils

A Factory Equipped with Japanese Machinery Now in Operation in Peking

China's first pencil factory has recently been thrown open for inspection in Peking. It is an Anglo-Chinese enterprise, organized by several British and Chinese business men to gain control of a large share of the pencil trade hitherto monopolized in the Far East by Germany and Austria. The company has a paid-up capital of \$100,000, and its present capacity is 100 gross of pencils a day. The machinery now in use is of Japanese make, but it is planned later to secure additional equipment from England and America. Eventually the factory will turn out large quantities of several grades of pencils, crayons, etc. Graphite and wood strips now in use are being secured from America.

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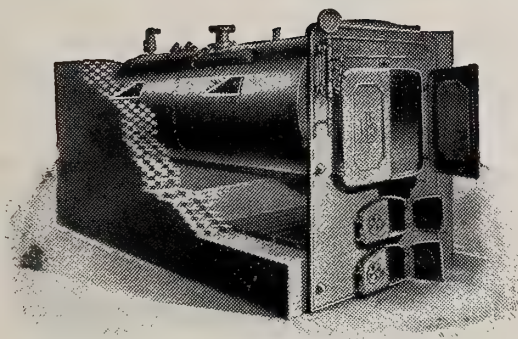
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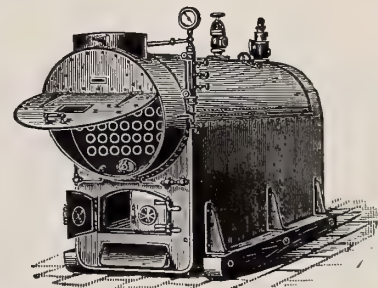
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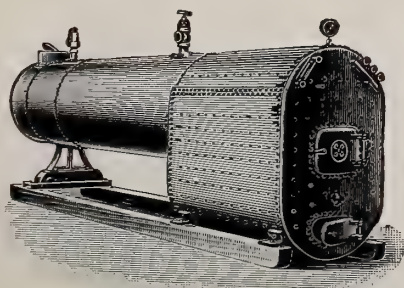


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Judging Profits With Discrimination

The National City Bank Points Out that Reports on So-called "Profiteering," Intensify Class Prejudices, Peculiarly Inopportune at the Present Time

(From the "Manufacturers' News")

Profiteering is something readily denounced but not so easily defined, and all those who discourse upon the subject have not demonstrated their capacity to judge of profits with practical sense and discrimination.

In theory there would seem to be a field for the Federal Trade Commission, in which useful work might be done. Its functions are supposed to be those of a semi-judicial body, with powers to investigate competitive practices and other business methods and conditions, with a view to procuring for the public an authoritative and reliable account of such affairs, in order that, largely by publicity and partly by legal procedure, fair play and honest dealings may be maintained as the rule in business life, and unfair and dishonest practices suppressed. In view of the magnitude and complexity of business operations in these days, the great powers undoubtedly possessed by corporations of large capital, the dependence of the public upon such corporations for many necessary services, and the suspicion and antagonism often felt toward them, it would seem to be very desirable that there should be an official body having at its command the facilities

for investigation, able to make and charged with making an impartial, instructive, informing report upon matters which may be in controversy.

Evidently the value of such a body will depend entirely upon the spirit and ability with which it does its work. The public can never be well served except by the truth, and the commission should serve as a fair, intelligent, well-advised interpreter of business conditions and of sound economic principles. In short, according to our view, such a body will best serve the public by not acting solely as a critic and prosecutor, but rather as an intermediary between the active, energetic, but highly useful forces which, while clashing frequently among themselves, are guiding production and development, and, on the other hand, the consuming public, which is the final beneficiary of all industrial progress.

Understand Fundamental Principles

It should certainly understand the fundamental principles upon which business must be conducted in order to prosper, and have a proper appreciation of the fact that development and advancement in industry will bring greater results to the public than a system of drastic regulation which would tend to weaken initiative and stereotype methods. The whole undertaking to supervise and control industry by Governmental authority depends for its success upon the judgment and restraint with which the power is exercised. If the power to control and direct industry is to pass over in any impor-

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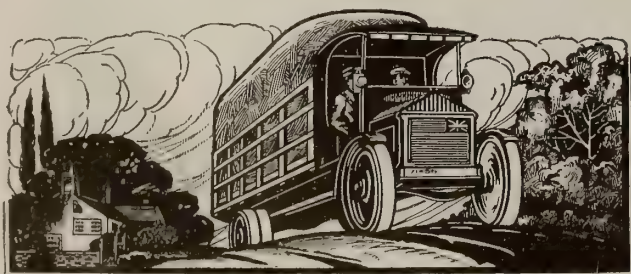
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The views shown on this page are two of one of our two Welfare Kitchens in our home—London—manufacturing plants.

In these kitchens, complete hot meals, hot supplements to home packed lunches, such as soup, baked beans, hot milk, beef extract drinks, tea, coffee, etc., or quick lunches, are procurable every working day in the year. They are prepared from selected and most wholesome of fresh supplies, and served to workman at absolute cost.

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tant degree from the individual owners to public authorities it will be necessary that the latter exercise their powers with the same forethought and prudence, the same willingness to forego immediate results for the sake of larger benefits in the future, which characterize every successful individual career. Otherwise the public benefits which accrue from the leadership of men of exceptional ability will be lost, and society will be held down to a dead level of mediocrity, without incentive or ambition.

Low-Cost Offenders

The Trade Commission begins to report upon profiteering with the announcement that the outstanding revelation which accompanies "the work of cost-finding is the heavy profit made by the low-cost concern under a Governmental fixed price for the whole country," and the report consists of a showing-up of these iniquitous offenders.

That low-cost producers make large profits under prices which permit high-cost concerns to operate is surely not a revelation to business men generally, nor does it seem proper to single out the low-cost producers for criticism. If, as is usually the case, their low costs are due to conditions which they have created, they are not responsible for the fact that prices are high; they have done their part toward lowering them, and they show the way to the others. If all producers would do as well, prices would be lower. It is the low-cost producer who is rendering the best service to the public. He is the leader, the explorer, the pathfinder in industry. When he makes mistakes he bears the cost of them alone, and both his mistakes and his discoveries show the way to his less enterprising competitors. Any advantages which he may gain are temporary, because after he has set the example the entire volume of production may be placed on the same basis. Moreover, the public can better afford to pay a given price to a

low-cost producer than to one who makes little or no profit. The former, by doing his work with a lower expenditure of labor, releases labor for other work, a consideration quite as important as price. Furthermore, his profits are subject to taxation, and what remains to him at this time are probably invested for the most part in Liberty bonds or employed in increasing the production of things vitally needed. His service to the public is incomparably greater at this critical time than that of the producer who, selling his goods at the same price, makes no profit.

Is there any principle of justice which requires a low-cost producer to sell his goods below the open, natural market rate as determined by free competition, or below the rate determined by the authorities as necessary to produce the required supply; or would the public interests be best served by such a rule?

Wheat, as an Example

If a farmer, by underdraining and fertilizing his land gets thirty bushels of wheat to the acre instead of fifteen, and thereby reduces the cost per bushel, is he under obligations to sell it for less than the going price, and would there be any public gain from having such a rule established? In the long run, would the public get its wheat at a lower price as the result of such a rule? And, finally, would it be practicable to attempt to regulate the selling price of wheat on the market to correspond with the varying costs to different producers, and to follow the regulation through all the transfers of wheat and flour on the way to the consumer? Is it conceivable that differences in the original cost of wheat could be maintained through all handlings, so that bread of the same quality would be sold to consumers at different prices?

The same general conditions apply to other products sold on the market. There is a greater degree of justice in

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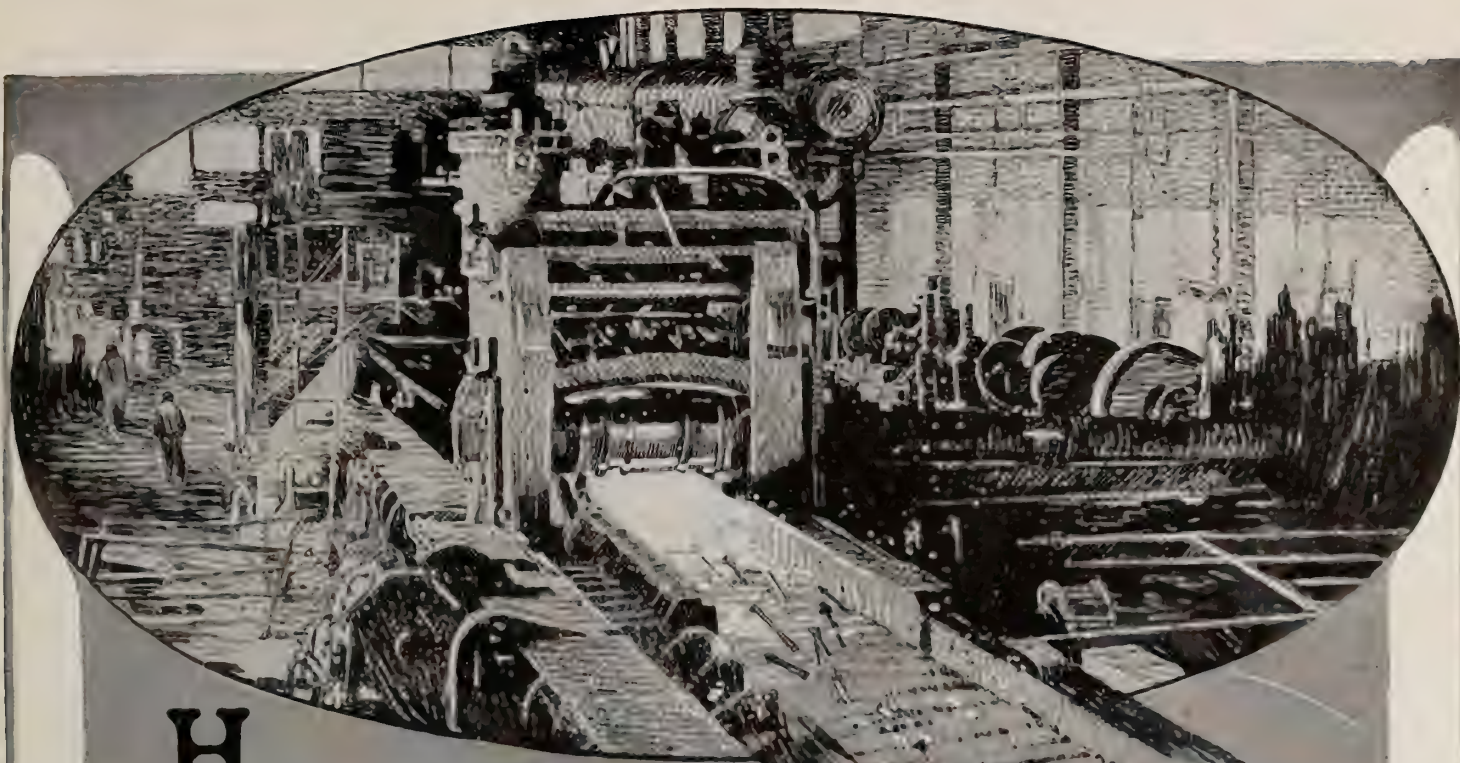
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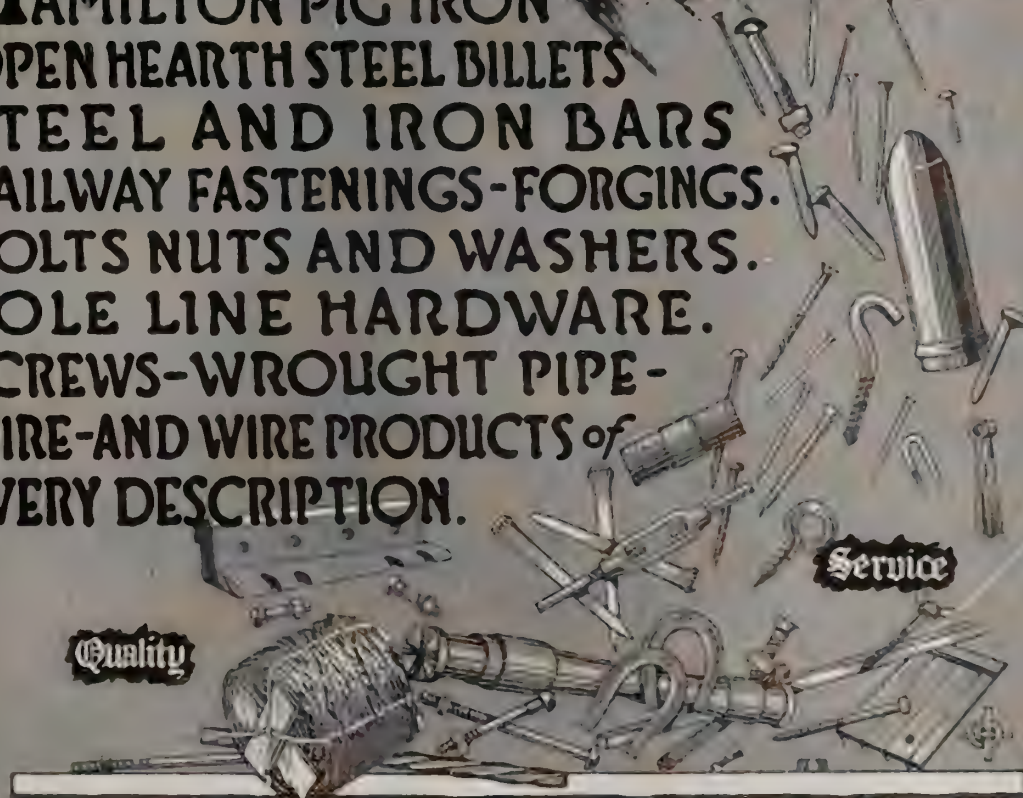
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the general rule that the benefits of exceptionally low cost production belong of right to the producer than will be achieved by any attempt to distribute them to the ultimate consumer, and in the long run public interests will be best served by this disposal of them. It is at the point where improvements of general benefit are achieved that reward and stimulus should be given, and, as we have seen, the public has its own gains from every improvement in methods of production, independent of those within the control of the producer.

If, then, it is the accepted rule that a low-cost producer who supplies only a part of the market is entitled to the general market price—if that is the recognized custom throughout the business world, if any other policy is impracticable as a general rule—is it proper to criticize individuals and hold them up to scorn for following this course? Is there anything to be gained for the public by discrediting the low-cost producer, minimizing his services, or taking away from him any share of the rewards which naturally flow to him? Is there any likelihood that others to whom his natural gains might be arbitrarily distributed would make a better use of them, from the standpoint of public interests, than the individual who by the very circumstances of the case is shown to be a leader in the industrial field?

Unusual Business Conditions

Business is being done at the present time under great difficulties and uncertainties, and profits are not closely calculated in advance. Many experienced dealers prefer to restrict their operations and even retire from active business rather than take the chances of loss. The profits of this period cannot be finally calculated until the war and period of readjustment is over. Up to this time fortuitous circumstances have been favorable to profits, but experience has taught that the profits which come under such conditions are needed in

the long run to meet the losses which come in the same manner. The favorable turn of a year does not warrant a departure from the usual business methods, nor can ideas which no one adopts in his own affairs save under exceptional conditions, of which he would insist upon being the sole judge, be successfully set up as an official standard of conduct. The theory that a business man is under obligations to sell his labor or product at an arbitrary price below that fixed by the natural play of economic forces in a free and open market has never been established in practical affairs or even as a theoretical ideal. Certainly no general rule can be laid down for its application, and this being so, it would seem that the subject should be treated officially in a temperate manner.

Profits of Large Business

The surplus earnings of the twelve Federal reserve banks, after paying six per cent. dividends, in the first six months of 1918 average twenty-five per cent. of their paid-in capital, and for the full year will exceed fifty per cent. It is true that the surplus earnings of these banks inure eventually to the public treasury; nevertheless, these earnings afford a clear demonstration that exceptional profits may be made in the ordinary course of a large business, as the result of fortuitous conditions and without any intention of "profiteering" or any act of extortion or improper conduct.

Almost everybody is doing what he can just now to promote a spirit of unity and co-operation throughout the country, and ill-considered utterances, under the color of authority, which exaggerate old suspicions and intensify class prejudices, are peculiarly inopportune. They throw sand into the bearings at a time when the highest efficiency is needed.

Moreover, looking forward to the period following the war, if the industrial activities of this country are to be hampered by a narrow paternalism which does not understand the re-

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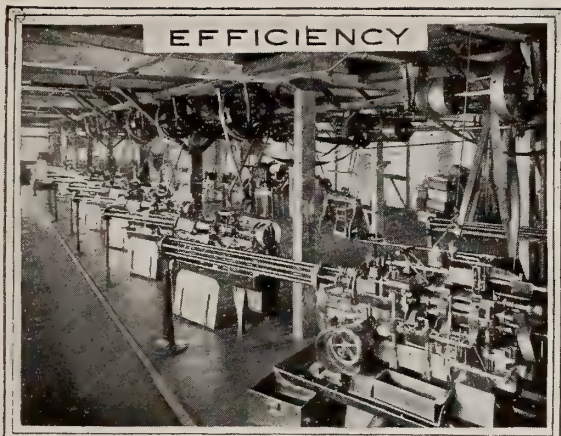
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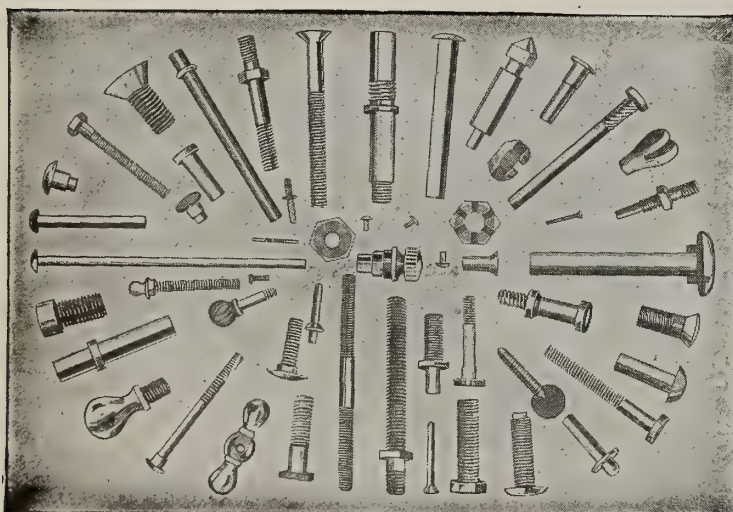
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lation between industrial profits and industrial progress, or the relation between industrial progress and social progress, the outlook will be a gloomy one. There is no way of realizing the hopes and ambitions of the people except by industrial progress, and this is not only stimulated but financed by the industrial savings achieved by the low-cost producers, which are first realized as profits and then used as capital. Without these savings industry will stagnate and society will have nothing to expect but disappointment, confusion and turmoil.

Bringing Back the White Pine Forests

Over the Greater Part of Eastern Canada the
White Pine is the Best Tree to Grow, While
it is the Most Distinctive and Well-Known
Timber; its Reproduction of Great Interest

By R. H. CAMPBELL

Director of Forestry, Ottawa

(From the "Canadian Forestry Journal")

In spite of the value to which spruce has climbed in recent years and the dangers to the white pine which are threatened by the white pine blister rust and other evils the fact remains that over a great part of eastern Canada the white pine is the best tree to grow while it is the most distinctive and well-known timber. Its reproduction is, therefore, a matter of great interest and one well worthy of careful study and observation. But at the outset it should be recognized that the problem is not a simple one and is not to be solved finally and satisfactorily by opinions based on superficial observation or experiments, but will require years of careful management and balancing of the various influences that affect regeneration to decide what is the best method to follow and how it should be modified to meet changing conditions. Government forest experiment stations which will carry such experiments through to a conclusion are absolutely necessary if the proper methods are to be worked out and understood. With the co-operation of the Honorary Council for Scientific and Industrial Research a forest experiment station is being organized by the Dominion Forest Service at Petawawa in a typical pine region of Ontario where the systematic study of conditions following lumbering for pine and the possibility of bringing about its reproduction will be carried out.

A Complex Problem

In the meantime the question may be discussed from the general knowledge of the habits of the white pine and of the methods followed in other countries with species of the same general characteristics. The first thing that strikes the attention in studying the methods followed in other countries is that the problem is not a simple one but a complex one and varies with every varying condition as to soil, moisture, light and mixture of species. To quote Professor A. Jolyet of the Forest School of Nancy in his work on Silviculture:—

"A forest is not, like a field of wheat, a simple group of individuals of the same species growing side by side to the time when the bushman decides the fit time has arrived to use the axe; forest species, with requirements often the most diverse, find themselves growing together, and from birth to old age they not only increase in size but they modify their wants not only according to the physical condition of the soil which bears them, or according to the space which is allowed them; they themselves, increasing in size or shedding their foliage, have a considerable action on the soil, upon the quantity of light which they allow to pass to it; upon the debris which they give to it; always in a struggle with one

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CANADA

another they lend themselves or oppose themselves to the existence of a whole population of trees newly arrived, of shrubs, of low plants or of animals which in their turn react upon them."

The white pine is a tree suited to light, well-drained soils, and such soils are the ones that should be devoted to its production. Not that it will not grow on richer soils as the finest pine known was that growing on good soil amongst the hardwoods, but these lighter soils are the ones available for forest purposes to which the pine is best adapted and on such soils it should be favored in every way.

Handicaps on Germination

What have been the results of some of the operations that have been carried out in previous years? The pine amongst hardwoods generally dominated the stand, but when it was cut out the hardwoods held the ground. Their shade prevented germination of the pine seed or the development of the tree, if the seed did germinate. The result was that the forest became a hardwood forest and there is no evidence left of the existence of pine except the old stumps or an occasional young pine that has happened to have special circumstances in its favor in a particular spot. In some pine forests the understory was of spruce and fir, both of which germinate and grow better under shade than does the pine, and when the pine was cut out the understory became the forest and the pine had no opportunity for reproducing itself in such adverse circumstances. In many cases these results may have been satisfactory to the interested parties but in a study of the possibilities of the natural regeneration of white pine the cases are significant. They show that the problem is not a simple one for even if the pine had not been taken out in the circumstances indicated and was left to produce and scatter seed it would in time have been vanquished by the

understory unless a fire or hurricane had come and opened up a space to light where the seeds could germinate and the seedlings grow.

The pine is firm rooted and can therefore stand isolation without danger of windfall better than some other species and while it requires light its demands in this respect may be considered as moderate. It would therefore lend itself to a system which would permit of the opening up of the stand of timber to a considerable extent.

Systems of Cutting

There are several main systems on which cutting is carried out. One is the clear cutting system in which all the pine is taken off the ground. This system might be followed where the stand of pine is mature and fairly even-aged, but in order to secure the reproduction of pine several things are necessary. There must be a stand of young pine on the ground ready to take the place of the old or provision must be made for a supply of seed before the old trees are all taken out. If the cutting is carried out after a good seed year there may be sufficient of a supply of seed fallen which, germinating in the light and warmth of the uncovered ground, may furnish a satisfactory stand for establishing a new forest. If not then some of the pine must be left to furnish seed. But these must be left with reference to prevailing winds and the distance to which seed will carry. The pine seed furnished with a light wing and borne high in the tree in the long pendent cones will carry for long distances, but the proper distance within which a sufficient seed supply will fall must be determined by observation in different districts. If, however, the ground is covered thickly with pine needles when the seed falls it may never reach the soil and get a chance to germinate and grow. With the too full opening of the ground, the grass may get a chance to grow

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and in a struggle with grass the pine has not much chance. If, however, the new growth is light, shrubs and such trees as poplar and white birch, the pine may be expected to hold its own and to overtop the others in time, and it may do this with the heavier shaded hardwoods if they get away to anything like an even start.

If, however, when the pine is removed, the ground is shaded by a dense covering of hardwoods or of spruce and fir, the chances for the germination and growth of the pine are almost nil, and to ensure pine reproduction they would require to be removed at the same time as the pine.

Local Conditions Mean Much

The system most discussed in Canada, however, and the one supposed to be indicated by the diameter limits for cutting set by the several governments is the selection system, the system by which a selected number of trees are taken out and the remainder are left to increase in size and to furnish a seed supply. But this system, even though carefully followed, does not furnish all the conditions necessary. The soil and light conditions may not be satisfactory. Here the presence of some broad-leaved trees, the fallen leaves of which assist the disintegration of the pine needles, will assist in preparing the soil. And the light conditions required for germination may be secured by making heavier cuttings scattered through the area of operations or the cutting generally may be made sufficiently severe to open the soil up fairly well to the light. What size of openings are to be made or how far the soil is to be exposed will depend a great deal on the nature and conditions of the soil and of the forest cover. Experiment and observation must determine the question and at the present time only general indications

can be given from a general knowledge of the manner of reproduction of trees and the habits of the white pine in particular.

Until the forester gets into active touch with the timber operations and has some authority in directing them so that observations will be made accurately and systematically and with due regard to all factors we will be working largely in the dark. It is by this method, and by this method only, that the forests of Europe have been brought to the perfection they have reached. It has taken time there. It will take time in Canada, but a beginning on right lines as indicated cannot be made too soon.

Housing for Isolated Manufacturing Plants

This Article, from the Standpoint of the Western Manufacturer, Shows how the Latter has a Somewhat Different Problem to Handle than his Eastern Confrere

By A. J. TAYLOR

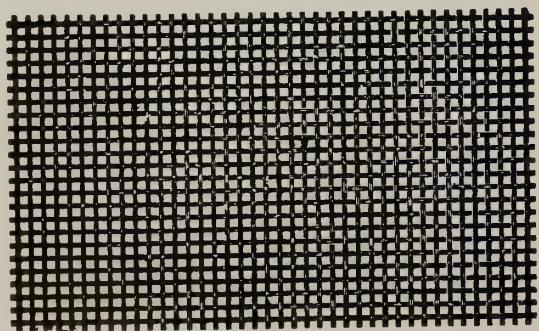
Taylor Engineering Co., Limited, Vancouver

(Reprinted from "Industrial Progress")

Abraham Lincoln stated, "The two greatest assets of a nation are the land and the people." The application of this thought to the responsibility of the landlord is comparatively new. We are just beginning to ask the real vital import of the proper housing of an industrial community and the effect proper environment has on efficiency, health and outlook of employees, and therefore on the success and dividends of the industry employing him. In several countries, notably Great Britain and the United States, the question of industrial housing has been studied and experimented with varying

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success. Both these countries exhibit a number of well-planned industrial communities, several of which date back twenty-five years or more, and astonishing progress is being made in the development of the science of industrial housing by such excellent organizations as "The National Housing Association of America" and "The American Institute of Architects," both of which have contributed within the last few years a wealth of material, the national importance of which can hardly be overestimated.

The industrial housing problem of Western Canada, although identical in principle, presents certain different phases from the same problem in the Eastern State or in Great Britain. This is largely due to differences in climatic conditions, scale of wages, and the resultant standard of living, and also to the precedent which has been established in town sites already built in Western Canada. There are a few reasonably satisfactory industrial town sites in British Columbia, but in the majority of cases the providing of housing accommodations for the workers in our isolated industrial communities has in the past been a matter of secondary consideration, and left entirely to the tender mercies of plant superintendent and his staff, who for the most part are guided by indifferent precedents.

Industrial Housing a Profession

Industrial housing has to-day the dignity of being a separate and distinct branch of professional activity and, to be handled most successfully, should be dealt with by an organization comprising architects, engineers and constructors, so that there may be unity in the finished result.

Such organizations exist, and the more progressive manufacturers are availing themselves of their services, realizing that the problems of modern industrial development, embracing as they do every branch of constructive and engineer-

ing science, should be handled by specialists able to shoulder the responsibilities of design and construction.

This article is only intended to touch on the subject of housing as related to the isolated manufacturing plants, or what are popularly known as "Company Towns."

Not an Easy Problem

Every employer in Western Canada operating at a distance from an established community has faced, or is now facing, the problem of housing his employees. It is never an easy problem, and it involves a responsibility that must be accepted. The isolation of mining towns, the impermanence of many of them, the shifting character of the labor force, and the absence of local self-government, all cumulate to throw the responsibility upon the employer.

But the employer is placed in an advantageous position in relation to the housing problem. He knows the purpose which he wants his community to serve and can, therefore, have it laid out with forethought. He can consult with those organizations who have made a special study of the problem. He knows how many families he will need to supply with houses; he can build on a large scale and so reduce costs. He knows the type of labor he will want to house, and can supply their particular needs; but first of all he must himself come to a clear understanding of the absolute necessity of providing adequate housing and the direct bearing that the successful or indifferent working out of this problem will ultimately have upon his industrial operations, be they big or little.

Most employers have felt for a long time that the housing problem is one that deserves their earnest attention, but it has in the past been catalogued under the heading of non-productive capital investment and, naturally enough, has not received the study that to-day labor conditions now make inoperative.

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Apart from any consideration of this subject from a humanitarian standpoint, the industrial employer is beginning to realize the tremendous importance of proper housing and community planning in their relation to, and as a productive factor in, maintaining a steady supply of labor with a reduction in the serious loss due to excessive labor turnover.

Good Housing Holds Workmen

It is being recognized that in order to secure good workmen and to hold them it is necessary not only to pay standard wages and provide steady work, but to provide good houses for themselves and families, with cheerful surroundings and facilities of recreation, and that these matters can no longer be left to chance, but require special study of the whole subject from the workman's point of view.

Company housing is not merely a problem concerned with the provision of more houses for industrial employees; it affects not only the fundamental relations of employer and employee, but it also has a wide social significance. There was a time when some prominent man said, without being contradicted, "The home of the average workman was a place to eat in, to sleep in, and to keep away from as much as possible." This is anything but true to-day, for to-day the workingman is earning larger wages, saving more money and spending more on his family and their comforts, than ever in the history of this country. Some credit is due, no doubt, to prohibition, but even this does not account for the general improvement in the workingman's ideals of living, which require for their satisfaction a larger share of the "amenities."

The careful student of the problem of industrial housing is fast realizing the important part that the wives in a com-

munity play in determining the satisfaction of the employees and reducing the labor turnover; but it may still be questioned whether sufficient attention has yet been given to the importance of this factor and to providing facilities in isolated communities for the bringing together of the women and children in a social way during the afternoons or evenings, when the men of the families are at work. Club houses are often provided for the men, but it is seldom that buildings for similar purposes are provided for the women. One very large employer of labor, who is in advance of the average and who has probably done more in the direction of providing desirable homes for his men, remarked very recently that "an industry in this Western country is warranted in making almost any expenditure that will insure and promote a spirit of contentment among the women in the community, knowing that a great deal of labor unrest is engendered by discontent in the homes, due to unsatisfactory living conditions."

The Money Value of Good Housing

If a concrete example were needed of the actual money value of improved housing, and the benefit arising from the influences in the workers' homes, we might instance a comparatively recent case in B.C. of an impending serious strike being averted principally by the influence exercised on the employees by their own wives, who, when brought face to face with the possibility of being obliged to leave comfortable homes, with their individual gardens and community interests, persuaded their husbands, sons and brothers to consider the advantages they enjoyed in these matters at the same time as they were critically comparing the wage scale and their employer's relation to their union.

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CANADA

Consumer Buying Habit Changing

Some of the Transformations that have Occurred in Many Important Lines of Productive Industry Since the War Started

By TRUMAN A. DeWEESE
(Reproduced from "Advertising and Selling")

Advertising is passing through a crisis. Being the most important factor in merchandising, it must quickly and intelligently adapt itself to changing conditions brought about by the war. It must meet new necessities, new tastes, new desires. It must put across new war-time products. Habits created by a hundred years of advertising are being constantly wiped out by the economic demands of a war that touches the lives of all the people in two hemispheres. Trade-mark values suddenly go up in the smoke of battle. Essential elements that have gone into well-known manufactured products are commandeered by the inexorable law of military necessity.

Advertising must make new habits and create new values. In many instances the marketing experience of several generations of one family, where the business has been handed down from fathers to sons, is hammered into nothing by the mailed fist of grim-visaged war.

Good-will Asset Costs Millions

The "good-will asset" behind well-known trade-marks, which has cost millions to build up, is suspended until the issues of the war seal their death warrant, or regalanize them into life. Many of these trade-marks have such staying power that the ravages of a ten-year war could not remove them from public favor. Many of them will not survive the period of suspension of obliteration. They will never come

back. They haven't enough momentum to carry them across the war-swept wastes of "No Man's Land."

Consider for a moment the economic and merchandising transformations that have occurred in many important lines of productive industry and their effect upon the buying habits of the people. A hundred million persons were suddenly asked to change the food habits of a lifetime, and in changing these habits they have learned some things about food that the art of advertising could not drum into their intellects. They have learned a lot about proteins, carbohydrates and calories. They have willingly absorbed dietetic information which they treated with the jovial jeers of jocund health in the days before the war. They have learned that ancestral habit and palate pleasure have made them victims of much food folly.

Economic Habit Becoming Fixed

White flour bread has gone from the dietary map: never to return. Wheat conservation will be a fixed habit after the war. Bread will have to be made from a larger per cent. of the wheat grain—in fact, thousands of consumers will demand the whole wheat in all wheat products of every description. The economic habit will become so fixed that thousands will not depart from it. There will be less waste. We are eating some of the "substitutes" for wheat as a matter of patriotic sacrifice. Advertising will have to make these substitutes toothsome and desirable.

Now we are cribbing food from the horse, and the cow, and the pig. Advertising will have to make us actually want these foods in the days after the war. People will eat less, and hence there will be better thinking, better health and higher efficiency. Meat will be an unimportant part of the diet.

The notion that meat is necessary to maintain muscular strength is a delusion. It will depart from some tables, never

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and Columns**



**Capacity
36,000 tons**

**5,000 tons of Standard
Shapes of Structural
Material in our yards
for immediate ship-
ment.**

Enquiries solicited

The above is a building recently erected for the Steel Company of Canada at Hamilton, Ontario

CANADA FOUNDRIES & FORGINGS LIMITED

Original Producers and Distributors

Nail, Tinners',
Farriers', Riveting,
Machinists'
Hammers



and Sledges, also
Axes and Wedges
of All
Descriptions

Blacksmith Sledge No. 37. Cross Pein Solid Cast Steel

Produced at

The James Smart Plant, Brockville

ECONOMY

Rapid production is dependent on the use of
ECONOMICAL TOOLS AND STEEL. It is
safer *not* to specify High Speed Steel, but

Demand "Tyr," the Economy Steel

MADE IN CANADA

ARMSTRONG, WHITWORTH OF CANADA
LIMITED

Offices, 22 Victoria Square, Montreal

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WORKS, LONGUEUIL, P.Q.

THE CANADIAN BRIDGE CO., Limited WALKERVILLE, ONTARIO

Montreal Office: New Birks Building

MANUFACTURERS

RAILWAY AND HIGHWAY BRIDGES

Locomotive Turn Tables. Roofs, Steel Buildings and
Structural Iron Work of all Descriptions

to return. Others will eat it sparingly two or three times a week. The main diet of the future in the average home will be fruits, cereals and vegetables. Food advertising of the future will have to display dietetic intelligence and common sense.

A Great Advertising Opportunity

One of the greatest advertising opportunities of the war is presented by the almost countless substitutes for butter. A new "nut butter" is born every week. It is one of the absurdities of food regulation that this butter substitute must be labelled "Oleomargarine," although made from the white meat of cocoanuts, and in many instances purer and more wholesome than much of the dairy butter that is found upon the market. The marketing of these butter substitutes represents the normal competition between trade-marked products that is necessary to healthful merchandising and advertising.

Changes in the beverage habits of the people will also have a far-reaching effect upon advertising. Prohibition is sweeping across the country, leaving vast areas of parched populace to quench its thirst with non-alcoholic liquids. No longer will advertising genius be called upon to show how many gallons of beer were consumed by Washington, Jackson and Jefferson, and how many artesian wells had to be dug to cool the amber fluid. Advertising must put across the countless substitutes for beer—almost as many as the substitutes for butter. It is up to advertising to persuade the beer-consuming public that these substitutes are not only healthful and wholesome, but that the camouflage on the top is just as seductive and tranquillizing as the foam "that made Milwaukee famous."

Even more marked than the transformation in the food habits of the people are the changes brought about in the sale and manufacture of all sorts of wearing apparel. The pinch of scarcity and high prices is certain to make radical modi-

fications in sartorial taste. An effort will be made to conserve wool, leather, buttons and all sorts of trimmings that enter into the architecture of both men's and women's clothing. The more superfluous embellishments will be discarded.

In anticipation of the war, corsets have already been shortened at top and bottom. Perhaps the corset will depart altogether. If it does, it will be worth the cost of the war. High shoe tops must come down to a sensible height. Coats and skirts will be worn shorter.

We are getting used to short skirts. Perhaps they can be made still shorter without blocking up the already congested streets of the larger cities. There are men who could be easily reconciled to the disappearance of skirts altogether.

American Genius Challenged

Buttons will be made of all sorts of composition instead of metal. The time will come when the expression, "All wool and a yard wide" may be a slogan of honesty, but not of patriotism.

The marketing of war-time products and the changing habits of the consumer as a result of the war will challenge the advertising genius and enterprise of America, where the art of advertising has reached its highest development. Competition is the life of advertising. It is up to advertising to develop competition in trade-marked lines of merchandise to take the place of the products that have disappeared on account of the war. It is up to advertising to keep alive the great industrial activities of the country, to the end that we may finance the war with the least drain on the country's resources and with the least disturbance of the productive power of the people.

No longer is advertising the boon companion of sarsaparilla and swamp-root. It has found better company. Now it walks



Shelf Truck, Style No. 650.

Factory and Warehouse Trucks

OUR SLOGAN:—

"Put it on Wheels"

OUR BUSINESS:—

"Fitting the Truck to the System"

OUR TRUCKS:—

"Are Built for Service"

THE W. S. MAHAFFY CO.
MANUFACTURERS

COR. GLADSTONE AND TRAFALGAR AVENUES

TORONTO, CANADA

IN EVERY CANADIAN INDUSTRY

There is required at some time the analysis of some material. It may be an oil, a coal, a water or some more complex material you are using in your manufacturing. You are anxious to know its properties—to determine its suitability for a given purpose.

To give such information is one of the many services we offer to Canadian manufacturers.

Well-equipped laboratories and thoroughly practical chemists are prepared at all times to solve these problems for you.

The Largest and Best Equipped Laboratories in Canada

MILTON HERSEY COMPANY LIMITED

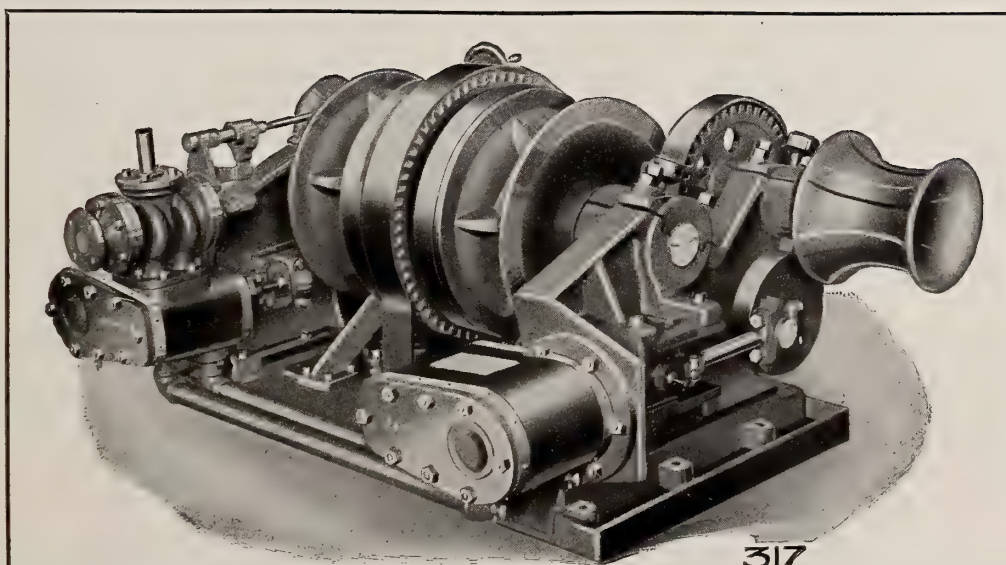
INDUSTRIAL CHEMISTS, ENGINEERS AND INSPECTORS

MONTREAL

WINNIPEG

Sole Canadian Rights to
Manufacture the
"HYDE"

ANCHOR WINDLASSES



Cut shows No. 2 Steam Triple Geared Reversing Anchor Windlass
for $1\frac{1}{16}$ " to $1\frac{1}{8}$ " chain.

Manufactured by

The Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.

**Steering-Engines
Cargo-Winches**

Which have stood the
Test of 50 YEARS

Propeller Wheels

Largest Stock in
Canada.

Steel Castings

ESTABLISHED 1860

and it talks with kings. It has raised the sinews of war for the nation and has drawn millions from the pockets of the people to support the greatest organization of charity and mercy known to mankind.

And this was done by display advertising in newspapers and magazines. No longer does anyone doubt the power of the printed pages when it carries to the people an honest message prepared by men who know how to use the English language.

Selling the War to the People

Selling the war to the people was the greatest achievement in the history of printer salesmanship. It was no small job to sell a big war to the people who could not visualize it, who could not grasp at first the reasons for our participation in the European conflict involving racial jealousies and hatreds. But the people had to be made to see that the conflict involved great fundamental principles that were vital to our own national life.

Mr. Roosevelt sold the war to a part of the people; then came President Wilson who sold it to more people; then came the newspapers and magazines, and sold it to all the people. And when you think of the price to be paid for it you will agree that it was the most colossal publicity job ever undertaken by the press of America. Having sold the war to

the people, the press is now performing a magnificent patriotic service by selling to the people the things that are necessary to furnish the revenue for carrying on the war; for maintaining hospitals, and surrounding the army and the navy with the highest type of uplifting recreational influences.

The primary purpose of advertising is to sell goods, whether the goods be tangible merchandise or whether they be service. There may be other reasons for advertising, but they are only incidental. One man likes to see his name in print. Another man likes the game. He doesn't know whether it pays or not, but he doesn't want his competitor to monopolize all the attention. If his competitor would quit advertising, he would quit. He is a good sport. You can't lose him.

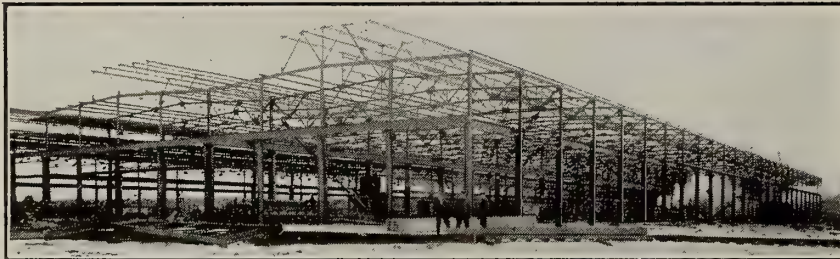
Real Purpose of Advertising

Another manufacturer wants to make the public familiar with his trade-mark. He will attend to the sales end of the business if he can by constant publicity get his name embedded in the public memory.

But when you get back to brass tacks, the real purpose of advertising is to sell goods. Advertising is not literature. The advertiser is sometimes captivated by the pretty pieces of rhetoric written by literary chaps that appear over his name every month in the magazines.

STEEL FRAME BUILDINGS

Roof Trusses,
Columns,
Fire Escapes,
Stairs,
Ladders, etc.



Plain Steel
Shapes, I-Beams,
H-Beams,
Channels, Angles,
Tees, Zees and
Bars,
Plates and Sheets

THE MARITIME BRIDGE COMPANY, LIMITED

New Glasgow - Nova Scotia

CANADIAN COLLAPSIBLE TUBE CO., Limited

MANUFACTURERS OF

**"Premier" Pure Tin, Plain and Decorated
Collapsible Tubes**

221 RICHMOND ST. WEST

TORONTO

RIDOUT & MAYBEE

Solicitors of Patents

Counsel, Solicitors and Experts in

PATENT SUITS

Agencies in the leading countries of the World.

EDWARD MAYBEE, Mech. Eng.

J. F. EDGAR, Counsel.

59 YONGE STREET, TORONTO

JULIUS COHEN & JOSEPHY

*Foreign
Domestic*

WOOL

*Noils, Wastes
and Shoddy*

Also operating **THE YORKSHIRE WOOL STOCK MILLS, TORONTO**

Manufacturers of Pulled Shoddies

H. V. ANDREWS Canadian Representative **13 Church St., Toronto**

And he will keep on paying the bills for a while, admiring the beautiful "copy," until some fine morning he has a look at the financial statement, and suddenly asks himself, "Does it pay?"

And if he thinks long enough and far enough he is apt to ask himself the question, "Does the writer of that copy know anything about our product? If he does, is he putting that knowledge into copy in such a way as to grip the reader's interest and attention? Is there enough salesmanship in it to anything about our product? If he does, is he putting that the market for our product, or am I merely helping to keep alive a lot of very nice monthly and weekly publications?" And maybe he will keep on thinking and interrogating—if he is not interrupted—until he reaches this conclusion:

"Advertising that doesn't sell goods is not worth the price; and perhaps the reason our advertising doesn't sell the goods is because the copy (which is the soul of advertising) has missed the real selling points behind the product. It has not only failed to reach the consumer, but has never touched the distributor, who is expected to carry the stock and supply the demand supposed to be created by the advertising."

The Business of Advertising

And so it follows that the manufacturer who pays the bills gets cold feet and quits advertising; or else he does a much wiser thing and employs a man who is willing to completely saturate himself with every selling argument behind the product; who is willing to sleep with it, eat with it, and dream about it; who is willing to think about it until he has evolved a "line of appeal" that will sell it, and who has the ability to project this appeal into the copy in such a way that it will actually put it across to the consumer. In order to do this successfully he must not only know the product and the market, but must have enough common honesty to use the publications that actually reach the people who are the possible consumers of that product.

It is the business of advertising to keep the dollar at work. How are we going to keep dollars at work at a time when the industrial resources and business energies of the people are being drafted for the war? Advertising is the answer.

The Government has shown its faith in the power of advertising by making use of it on a scale of magnitude never attempted before in this or any other country. It is the normal business of advertising to pull idle dollars out of their hiding places and put them to work. Therefore in these abnormal times it is doubly and trebly the business of advertising to continue this job.

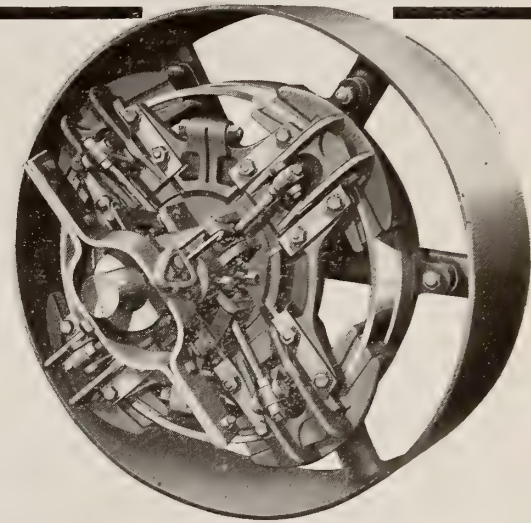
Norway's Industrial Development

Only during the Last Generation has Industrial Growth Advanced at Such a Pace as to Warrant the Use of the Term Industrialism

(From "Norwegian Trade Review")

Right down to the middle of the past century no manufacturing industry on a large scale was prosecuted in Norway. It is true that flour mills and sawmills commenced at a very early period to utilize our waterfalls, but these works were as a rule of minor extent; nor did other industrial concerns that gradually came into being, e.g., oil mills, sugar refineries, glass-works, paper-mills, metal-works, textile mills, etc., develop to any particular extent. This slow industrial growth prevailed for several decades down into the nineteenth cen-

Waterous Transmission Machinery



We Manufacture Saw Mill, Pulp Mill
Machinery, Engines, Boilers,
Fire Fighting Apparatus

Waterous

BRANTFORD, ONTARIO, CANADA

STRUCTURAL STEEL and BRIDGE BUILDERS



We build and erect all kinds of Structural Steel, Bridges, Roof Trusses, Bank and Office Railings, Stair Work, Elevator Grills, Fire Escapes, etc.

Over 5,000 Tons in Stock of
Beams, Column Sections, Angles, Tees, Plates, Bars,
Checkered Floor Plates, etc.

McGregor & McIntyre, Limited
1139 SHAW ST. TORONTO, CAN.

tury, until at last the general opinion was that there was no very great future in store for manufacturing industry in this country.

About the year 1850, however, a distinct change in this respect became apparent in both opinion and actual development. The greatest obstacle barring the way to strong industrial progress, lack of capital, undeveloped credit conditions, and defective means of communication, were gradually removed. At the same time the country began to grow conscious of the special qualifications it possessed for a strong development of manufacturing industry, such as, for instance, our exceptionally rich supply of water power, the favorable access to coal carried home as return freights by our ships so extensively engaged in the timber export trade, the amply supplies of useful raw materials yielded by our vast forests, our wealth of metals and our inexhaustible fisheries.

Metal Industry in the Lead

Progress was recorded first of all in the metal industry, then in textiles, and gradually a number of new branches of manufacture came into being. But the development was still proceeding at a comparatively slow rate, marked by rapid advances succeeded by a state of relative standstill or even passing decline.

Only during the last generation has industrial growth advanced at such a pace as to warrant the use of the term industrialism in a European sense. This growth must be attributed in the first place to the greatly increased activity connected with the improvement of the raw materials yielded by our forests and fisheries. But the immense growth of our industry during more recent years, which we are now in the very midst of, must more particularly be ascribed to the utilization of our numerous waterfalls in the production of

electric power, which is employed by our ever-growing electro-chemical and electro-thermal industry.

By the aid of these industrial branches Norway has attained a place in the ranks of those countries whose export industry plays an important and, as far as some articles are concerned, a dominant part in world supply.

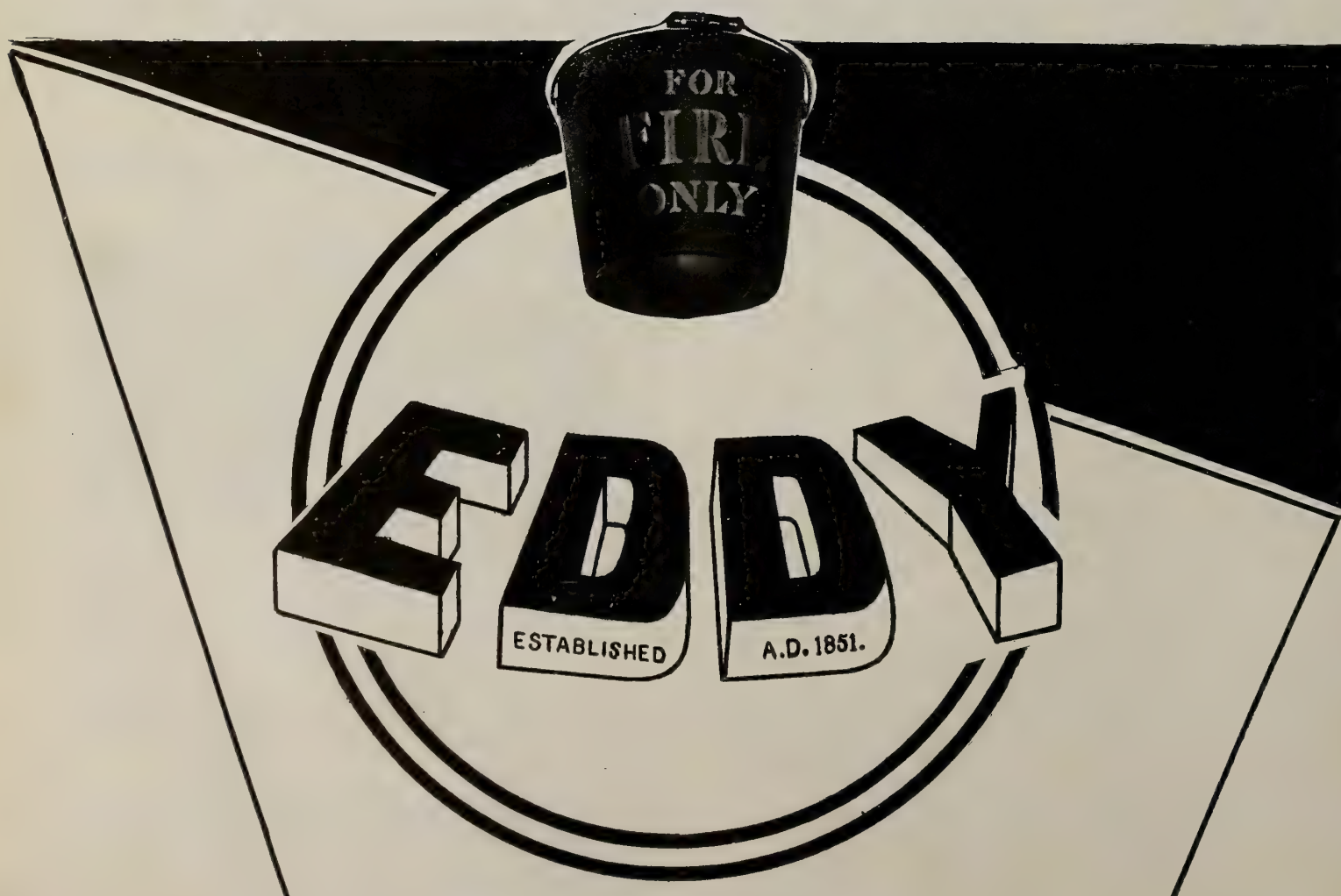
A Rich Forest Country

In the following brief review of the main features in the growth and present activity of Norwegian industry, we shall touch more particularly upon the exporting branches of same.

Nature has endowed Norway with great *forest* tracts. In proportion to its population, at all events, it is one of the richest forest lands in Europe, being surpassed in this respect only by Finland and Sweden. The work connected with the utilization of forests has, therefore, naturally ranked high among our industrial pursuits, and forests products have long occupied a first place among our exports.

In this, as in all other fields, the tendency runs in the direction of producing finished products instead of exporting the raw materials and semi-manufactures, as was formerly the case. Norway still continues to export considerable values of logs, pit props, balks, deals and boards; but the raw product is being turned into manufactures to an increasing extent. There is a growing production of doors, windows mouldings and other building articles; also of ready-built houses. There are many other trades in close connection with the timber industry, such as wood-working, furniture-making and joinery. But of greater importance is the further improvement that forest products undergo in the production of wood-pulp, cellulose, paper and matches.

The first wood-pulp mills were erected about the year 1870, and several paper mills were also started at the same period.





IT is a national necessity at present for Canada to improve her trade balance with the United States.

Manufacturers who are buying forgings or drawn or stamped metal parts outside of Canada, can do something towards helping this trade balance, by calling upon us for these goods.

We are equipped to make practically anything in a steel forging or steel stamping. Our capacity is so large that we can give prompt delivery; and our efficiency is such that we can quote you attractive prices for high-class work.

Dominion Forge & Stamping Co., Ltd.

WALKERVILLE, ONTARIO

Toronto Office: 510 Lumsden Building



For Full Information Write for Catalog I

Canadian Mathews Gravity Carrier Co., Ltd.

484 Richmond St. West, Toronto, Ont.

Dominion Copper Products Co., Limited

Manufacturers of

COPPER AND BRASS

Seamless Tubes, Sheets and Strips

In All Commercial Sizes

Office and Works : LACHINE, P.Q., CANADA

P.O. Address : MONTREAL, P.Q.

Cable Address : "DOMINION"

Somewhat later the production of cellulose was commenced, first sulphate and afterwards sulphite cellulose. These industrial branches have made extremely rapid headway in Norway, particularly of recent years.

Mechanical wood-pulp is turned out in this country mainly as a wet, white pulp in boards, of fifty per cent. matter value; a quantity of dry pulp is also produced. Previous to the war Norway's total annual wood-pulp production was about 800,000 tons, of which about 250,000 tons were used for home paper manufacture, the remainder being exported.

A. Fourteen-fold Increase

The total quantity of cellulose turned out in 1914 by the thirty mills in operation was about 320,000 tons, of which only 55,000 tons were sulphate, the remainder being bleached and unbleached sulphite pulp. In the course of about twenty years the production of cellulose has increased fourteen-fold.

The Norwegian paper manufacture has also developed very rapidly. Only from 1903 to 1913 the production increased more than three-fold. In the latter year there were eighty paper machines in operation distributed over thirty-eight mills, besides six pasteboard and cardboard mills. The total paper production in the same year was about 210,000 tons, of which about 180,000 tons were exported. Norway would be capable of supplying the British market with approximately one-fourth of its paper imports. The wood-pulp, cellulose and paper trades contribute about one-half of our total industrial export value.

Among wood manufacturers match-making also plays quite an important role. It originated about 1850, and has developed to a fair extent. Of late years it has had considerable difficulties to face, but yet the annual match exports have represented a value of about two million kroner.

Norway is essentially a *fishery* country, and fish and fish products occupy a prominent place in the list of exports. The value of this export during the year previous to the war amounted to 125 million kroner.

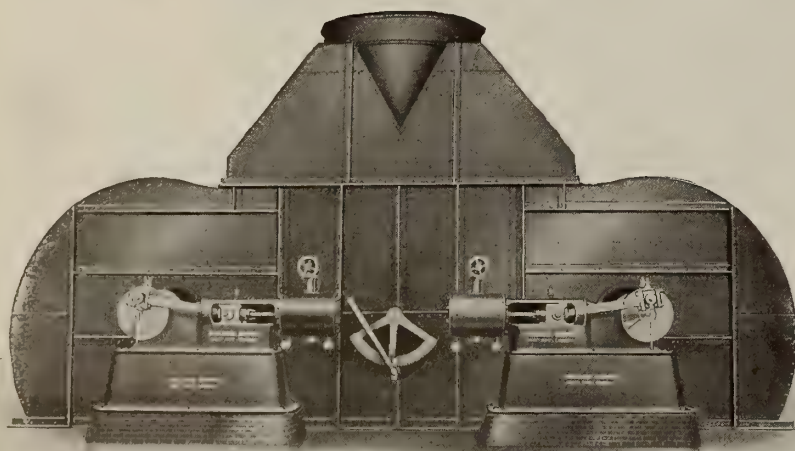
These fish exports have so far mostly comprised salted and dried fish, but refrigerating technique is now continually being developed to a degree hitherto undreamt of, thus extending the markets also for fresh fish. About 90,000 tons of fresh fish in ice is now annually exported, which means a ten-fold increase in the course of twenty years. As refrigerating methods have been considerably improved during the present war, further considerable extensions of this exportation may be anticipated.

The preparation of fish as a tinned product and in a variety of forms has grown into an industry of particular importance to the Norwegian export trade. The exportation of meat conserves is also increasing. On the whole, Norway has excellent natural qualifications for the *canning industry*, which has also grown apace of late years. Under normal conditions of trade Norway exported tinned foods to the value of about fifty million kroner per annum, the quantity exported in the last normal export year being 31,000 tons.

The Milk Condensing Industry

Another group of the foodstuffs industry which under normal conditions turns out and exports on a large scale is the milk condensing industry. Sweetened and unsweetened condensed milk, and sterilized milk and cream are produced. Milk is also conserved in powdered form as dried milk. In 1914 our export of condensed and sterilized milk and cream was about twenty million kgs., representing a value of about

SHELDON EQUIPMENT FOR YOUR POWER PLANT



We supply apparatus for plants of all sizes, from the smallest to the largest.

SHELDONS LIMITED
GALT, ONTARIO, CANADA

Let us tell you how to cut your coal bill.
Our systems are installed from Coast to Coast.

We can make prompt deliveries on:---

Fans	Steam and Oil
Blowers	Separators
Exhausters	Exhaust Heads
Heaters	Back Pressure
Engines	Valves
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Steam Traps	Regulators
Etc.	Etc.

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Sheldons Limited,	-	-	505 Kent Bldg., Toronto
Ross & Greig,	-	-	412 St. James St., Montreal
Walkers Limited,	-	-	259 Stanley St., Winnipeg
Robt. Hamilton & Co.,	-	-	Bank of Ottawa Bldg., Vancouver
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Send us your Specifications To-day

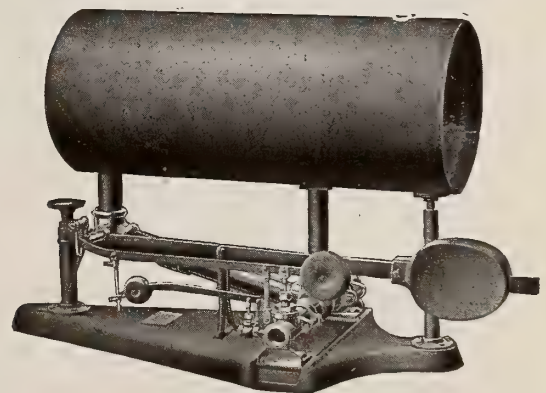
W. H. BANFIELD & SONS, Limited

370-386 Pape Avenue

Toronto, Can.

Feeds *Every Ounce* of Condensation Direct to Your Boilers

Morehead
— **Back to Boiler** —
SYSTEM



The system that gets it *all*—the system that turns a big preventable waste into a substantial profit.

The Morehead System will handle your condensation efficiently and economically *without* attention—*without* risk.

For 25 years it has been the leading system of steam line drainage and is to-day installed in some of the largest steam plants in America.

Let us refer you to a Morehead installation near you.

Full particulars on request.

Canadian Morehead Manufacturing Company

DEPT. J

258

WOODSTOCK, ONT.



eleven million kroner. The dried milk exported during the same year was 59,000 kgs., and had a value of 47,000 kroner.

As the reader will be aware, Norway holds a dominant position in the whaling industry. Of the total world production of whale oil in 1914, 750,000 barrels, Norway contributed 575,000 barrels, and in 1915 160 Norwegian whalers landed about 600,000 barrels of whale oil. Our production of this oil has declined during the past few years, in consequence of many whaling companies employing their whaling ships in the ordinary carrying trade, so as to take advantage of the high freight rates; but when normal times again return our whaling trade may be expected to reach its former level and to be still further extended. Whale oil is employed in a large number of industries where oils and fats are needed, and since the invention of new hardening methods whale oil has become of greater industrial value. Large quantities of this oil are used in the production of glycerine, the oil being separated by these new methods into glycerine and fatty acid; glycerine is extensively employed in the production of explosives, while the fatty acid is used in soap manufacture and for other purposes. By means of the new methods introduced, which have been brought to a high degree of perfection particularly during the last year or two, it is now possible to produce from whale oil an edible fat of excellent quality and free from any sub-flavor. A cheap and very suitable raw material for margarine making has thus been found, and it is anticipated that the production of margarine can be considerably increased in this country and that there will subsequently be a large surplus for export.

Fish Oil Export Increases

In the same connection it may be mentioned that the production of fish oil is being increased, and it is regarded as an export of increasing value. In 1915 a total of about 40,000 tons of fish oil was exported, of which 20,000 tons was steam-refined medicinal oil.

In respect of the number of hands employed the textile manufactures rank high among our industrial branches. In contrast to earlier periods the textile trade, however, gives at present practically no surplus for export, its production being almost entirely absorbed by the home market. This is also the case more or less with a large number of other branches of industry, e.g., the tobacco, brewing, glass, tanning, and leather industries.

Mining is of very old origin in Norway, and its development has been characterized by many fluctuations and relapses. At present this industry is making rapid improvement, and its exports are steadily rising.

Of such mining products we export a large quantity of iron ore, about 570,000 tons in 1913. Norwegian iron ore is somewhat poor, but production on a large scale combined with magnetic separation allows of remunerative working and refining. This ore is now chiefly exported as concentrates and briquettes. A few years ago electrical iron and steel works were introduced, allowing of the utilization of water power for smelting operations and rendering the working of poor ores remunerative.

Along with iron, the extracting of copper takes a foremost place in our mining industry, and the latter metal has gained greater and greater preponderance. Also in the case of copper the exports mostly comprise the raw ore, copper pyrites. Our production of copper pyrites was about 460,000 tons in 1913, about 360,000 tons being exported. Our home production of copper during the same year was about 2,800 tons.

Norway also exports a number of other raw minerals, such as molybdenite and rutile.

In 1913 Norway's exports of iron ore and iron pyrites, including a small quantity of other ores, totalled almost

exactly one million tons. The total mining output for the same year is valued at about 22.5 million kroner, of which only rather more than 5 millions represents finished metal (copper, silver, nickel, iron), whereas the balance refers to ore exported either raw or in a slightly refined state.

Developments in Mining

Also in the mining industry developments tend to run in the direction of prosecuting refining processes to the greatest possible extent within the country itself. Our export of metals such as copper, aluminum, zinc, nickel, and sodium, has increased quite considerably of late years, and large metallurgical works for the production of these metals are already completed, while others are in course of erection or planned. The manufacture of electro-pigiron and electro-steel has already been mentioned. Norway exports also considerable quantities of ferro-alloys, particularly ferro-silicon and ferro-chromium. The production of nickel, which at one time played an important part but subsequently declined and was entirely abandoned for some time, has again revived. The production of aluminum (with beauxite from France as the raw material) can be commenced in the immediate future on a very large scale. Several of the large water-power works constructed during the last few years are to be employed in the production of aluminum.

The Norwegian stone industry has attained a high degree of development, and under normal conditions considerable quantities of paving and building stone, in blocks and also finely-hewn, are exported to European and oversea countries. Norway also exports a fair quantity of feldspar quartz, about 50,000 tons a year previous to the war. Finally we may mention that our cement production is growing considerably.

Metal and Machine Industry

The Norwegian metal and machine industry has good traditions, and has made steady, healthy progress. This growth has been in close conjunction and interaction with the development of the other manufacturing industries of the country, the engineering works, foundries, etc., having to a great extent been able to supply other factory plant with the necessary machine equipment, tools, etc. The metal and machine industry has also grown to be of increasing importance to our export trade, and its ability to compete in the supply of wood-working machines, machine tools, and agricultural implements, is constantly becoming greater. There is also a steady increase in the exportation of various kinds of motor engines, telephone and sundry other instruments, and of various kinds of iron and steel goods, including such specialties as horse-shoe nails and fish hooks. Taking it on the whole, the Norwegian metal and machine industry has of late years made very appreciable improvement, an improvement that appears to mark the beginning of a promising expansion of this important branch of industrial activity. In close connection herewith there is the great progress made in the shipbuilding trade. Despite the difficult conditions and the many obstacles, Norwegian shipbuilding has to contend with, it has made rapid headway during the war, thanks to the unprecedented freight rates, and the great dearth of tonnage. New shipyards have been constructed and old ones extended, up-to-date machines and implements have been procured, and working methods improved and modernised. When these new yards have got into full working order Norwegian shipbuilding activity will have been extended to double its pre-war output. The war has to some extent entailed a reconstruction of shipbuilding, having greatly stimulated the construction of wooden ships; considerable numbers of lighters are also now being built of

CANADIAN STEEL FOUNDRIES LIMITED

SHIP CASTINGS A Specialty

General Offices
Transportation Building
MONTREAL

Works
MONTREAL and
WELLAND

ESTABLISHED 1850

DID YOU EVER NOTICE

that jarring, grinding noise in your machine shop caused by the metal gears?

Wouldn't you like to stop that noise? You can do it by using

NEW PROCESS GEARS RAWHIDE PINIONS

They last indefinitely too

Ask us about it?

R. GARDNER & SON, LIMITED
Nazareth, Brennan and Dalhousie Streets
MONTREAL

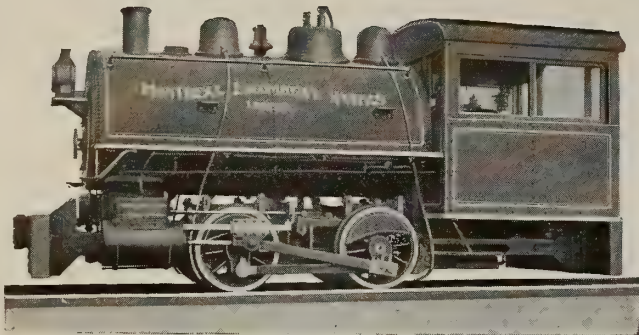
MALLEABLE IRON CASTINGS

HIGH TENSILE STRENGTH



GALT MALLEABLE IRON CO.
LIMITED
GALT ··· ONTARIO

PUT YOUR LOCOMOTIVE PROBLEM UP TO US—



WE are specialists in building locomotives.

We build all types and sizes, also all kinds of spare and repair parts for locomotives and tenders.

Our experience puts us in position to give you expert advice as to what particular type and size of locomotive is best suited to your needs.

Put your locomotive problem up to us.

MONTREAL LOCOMOTIVE WORKS, LIMITED
DOMINION EXPRESS BUILDING MONTREAL, CANADA

FALL REPAIRS

NOW is the time to think of Winter difficulties. The trouble is going to be to get Coal at any price. By repairing present linings with our *Plibrico-Jointless Fire-brick*, or repairing old Furnaces with *Plibrico and Plibrico Bond* you will require the smallest quantity of Coal. Coating exterior Brickwork with *Stormtight Plastic* will help still further, and this material in Plastic or Liquid will put your Roofs in a condition to withstand storms. *Lapidolith—Concrete Hardener*—will cut out the usual Spring repairs to exposed Concrete. Your own men can apply all three materials quite satisfactorily, and a postal will bring you full particulars.

MILL SUPPLY DEPARTMENT

BEVERIDGE PAPER CO., LTD.

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reinforced concrete. This mode of construction is dealt with in a special article in the present issue.

The industrial branch in which the greatest expansion has taken place is the chemical industry, among whose products nitrate of lime takes the lead. The production of this so-called Norway salpetre, by methods invented by two Norwegians, Professor Birkeland and Dr. Eyde, was commenced in 1907, and the remarkable expansion of this industry bears a touch of the romantic. The production has increased continuously, and this also applies to the exports, which were something like 70,000 tons during the year previous to the war. The fertilizer called cyanamide is also being produced and exported to a greatly increasing extent. Besides this, the production of phosphates has been taken up on a large scale. Large quantities of fertilising products of animal origin, particularly fish and whale manure, and bone meal, are also exported.

Carbide of calcium is a chemical product that has been in great demand in the world market of recent years, and Norway turns out a greater quantity of this product than any other country. Our annual export of carbide runs to about 80,000 tons, and the quantity produced and exported has grown at a rapid rate and still continues to do so.

Among other electro-chemical products extensively exported we may mention nitrate of soda, used in the dyeing industry, and nitrate of ammonia, employed in the manufacture of explosives. Of late years the manufacture of various other chemical products intended for exportation has been commenced, such as, for instance, superoxide of soda, chloric acid, potassium, phosphorus, and sundry drugs, carborundum, etc.

The great industrial expansion Norway has enjoyed of recent years is—as has already been indicated—associated in the first place with the conspicuous development of the electro-chemical manufactures. In certain branches of this industry concerns of magnificent dimensions have sprung into being in this country, with a view to supplying the markets throughout the world. This is, moreover, undoubtedly only the commencement of a continuous rapid expansion in the same direction. When a small country like Norway, which in many other respects may appear to be scantily endowed by Nature, has been able to attain such results, the reason is in the first place to be found in the wealth of our water power. According to the latest computation Norway's combined waterfalls, rationally utilised, ought to yield energy to the extent of something like 15 million h.p., of which one-tenth has as yet been taken into use. With these latent possibilities we must be justified in anticipating that Norway's industrial expansion will continue to make strong progress in such a way that its exports will be a factor that must be reckoned with in world trade.



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Use of Paper Clothing Increases

How Paper Fabrics Are Being Utilized by the Central Powers to Take the Place of Cloth

Since the declaration of war in 1914, the economic situation of the Central Powers has steadily gone from bad to worse, says the *Scientific American*. For the past two years the scarcity of wool and cotton has become so acute that it has been imperative to find ways and means of replacing these very valuable textiles.

Paper was soon taken up for this purpose, especially so as, for many years past, rags had been used for paper-making; and the question arose whether paper could not, in its turn, be made equally serviceable with the rags from which it sprang. The matter was taken up both in Germany and Austria in 1916, and very great progress was soon realized.

At the present moment this new industrial branch is producing in both countries paper fabrics suitable for the manufacture of clothing. In order to weave these fabrics there are mixed with the paper, for purely decorative purposes, various threads of wool obtained from waste collected by rag-pickers and from old uniforms and other cast-off clothing; the enormous stocks of old uniforms come in very handy for this purpose. Due to the use of this yarn the paper fabric acquires an appearance very similar to that of the pre-war materials made solely of wool.

Use of New Paper Materials

For some time past these new paper materials have been used exclusively for making the greenish-gray caps worn by the Austro-Hungarian soldiers. These materials have also rendered most valuable service, both in Austria and Germany, for clothing prisoners of war and refugees. In all the concentration camps this use of paper clothing is said to have given the very best results, as it is warm in winter and cool in summer. Its use has, consequently, extended; and at the present moment all the large factories in the Central Empires clothe their hands in paper garments. The suits are strong, practical for work, and are an excellent imitation of clothing made of genuine textile materials. They can also be dyed in any color just as easily as materials of wool, jute, etc.

The demand for paper fabrics is already so large that Austrian industry, with its 260 spinning and weaving mills, is no longer able to keep pace with the orders continually arriving for military requirements. In order to make this material the paper to be woven is cut up into endless strips or rolls, the shape of which varies according as to whether the material is to be subsequently spun, woven, milled or boulded. Thanks to recent experiments, it is now possible to produce a very fine but strong paper yarn. In weaving the warp only is of paper, the weft which is of course more apparent, being of cotton or woolen waste yarn.

In this, as in all other industries, Germany is far more advanced than Austria, where only a few trials are being made of paper materials for civilians' clothing, underwear, ladies' dresses, table linen, etc. In Germany all these and many other articles are already in use and in many cases rationed by means of cards. Paper underwear will stand washing, but it must not be steamed. Some of these goods are very beautiful, and the large shops display carpets, rugs, counterpanes, bedcovers, etc., that the casual observer passing in the street would never recognize as made of paper. The shapes for ladies' hats are also made of paper; and it may interest our readers to learn that the Vienna tramway conductresses are dressed from head to foot, including their boots, in paper.

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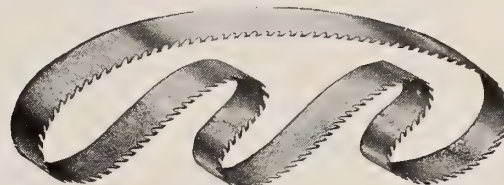
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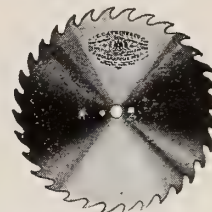
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Why Men Fail---A Study in Personality

Failure in Most Walks of Life is Due Primarily to Absence of Preconceived Determination in One Sense and an Absence of Pluck in Another

By JAMES M. GLOVER

(From the "Mysore Economic Journal")

To explain the problem of why men fail is almost as impossible as to point out the reason why other men succeed. There being no such thing as luck (I am depending on many worthy philosophers here) success must occur owing to the right man being in the right place at the right moment (or not!) or at least so one would think! This, in itself would give any one a triple crown of correctness which would enable him to go far—the farther the better.

Copy-book Rules

I used to believe in copy-book headings, and assimilated the succinct apothegms therein contained. Here was the path to success, plainly laid down—and dusty to boot. "A stitch in time," etc.,—we all know them, those boresome shavings from the tree of knowledge. I only knew personally, one individual who acted upon these copy-book headings, and his favorite was, "Early to bed, early to rise, makes a man healthy, wealthy and wise." He is now a timekeeper at a factory starting at 4 a.m.

Nevertheless, this "puts me off" copy-book headings and one is drawn farther to find the reason why men fail. I have often thought that in the scheme of nature it has been ordained that a man shall fail—gloriously or ingloriously—that his fellows may watch, and watching, take warning thereby! But no! Believe me! In the theatrical firmament

the very next impossible musical comedy that happens along will find its speculative backer, will lose its allotted sovereigns, and go the way of all such "brilliant successes." So the "awful example" explanation won't do.

After all is said and done "failure" is an arbitrary and comparative word. An original old gentleman has recently died, Mr. W. H. C. Nation, a failure (theatrically) in the public eye if ever one lived. But to see the hoary old man sitting in the wings at each performance, laboriously thumping and booming applause at his own wretched songs (what time not a sixpence was in the house) was to appreciate the fact that "in the lexicon of age there's no such word as 'fail.'" And at any rate this miserable financier never neglected to pay out. As I say, failure is a mere matter of opinion. We have the story of Bizet—after the first reception of his "Carmen"—saying with tears in his voice that he did not think he had made a success *this* time. Anyone knows that "Carmen" has not failed.

Can't All Be Successes

Again, it must be conceded that a world full of "enormous successes," or their enormous successors, would be hardly tolerable. It is no good me after my "terrific" first night success going to Jenkins (a fellow producer) to tell him all about it, because it is only too certain that he also did will or mean to do something far, far better! And even press notices will not convince him, because he simply says, "Ah! you're well known to the press!" So that if one could only do a real failure, just for once, it would be quite good to walk the world listening for everyone to tell you just exactly how you failed (and all different).

I have not the slightest doubt that in some future (improved) world, when everybody, nearly, has learned exactly

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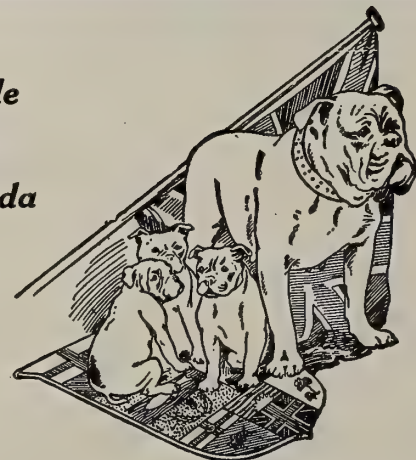
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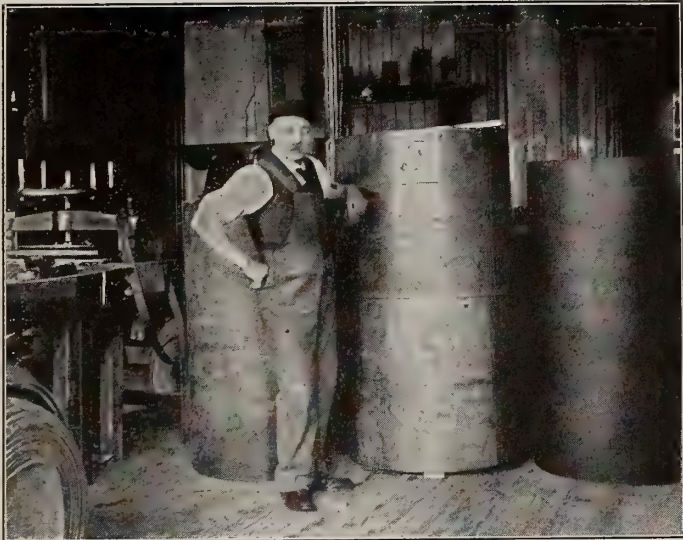
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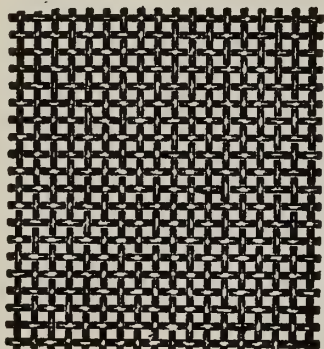
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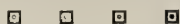
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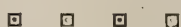


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how not to fail, there will be a peculiarly jolly life for the one "failure." He'll be able to sit and chuckle at the stories of the enormously successful, and have a good time generally, while they are wrangling over their "circulation" or "seating capacities." There are few things deadlier than great geniuses in conclave, but if you watch them carefully they do not "conclave." They keep very quiet. It shows dignity; also it prevents being bowled out.

No Royal Road to Failure

There is no royal road to failure; some achieve failure, some have it thrust upon them. If one were to believe the copy-book staccato remarks, it's easy enough. (I wish I could "answer back" to a copy-book). "Whatsoever you find to do, do it with all your might." Very well! I knew an ardent perspiratory student of the drama, when he was a super—but quite a nice chap. He left to take a small part elsewhere. I occupied a box one night, and he (with a metropolitan engagement in view) on perceiving myself became actuated with fervent zeal. He rushed on to the stage to say his one line, fell into the orchestra, was promptly sacked—and there's your failure!

It must always be remembered that failure is not necessarily labelled, it wants discovering much in the same way as success. It may very well be that failure in a certain direction is merely meant to drive a man out of a wrong groove into one more fitted to his capabilities. It is a soothing thought and I present it with pleasure to many politicians and bigger public men. Not that I "go in" for politics. We "bar" polemics of all descriptions at the theatre. They "fail" to attract!

In very many cases failure is merely an explanation of being before one's time. *The Times* was before its day, once upon a time, and certainly achieved "failure" when it produced the first halfpenny morning paper (now forgotten, even by press men) *The Summary*. This neat little journal provided one with a boiled-down version of the (then) threepenny thunderer. An admirable idea, doomed to failure. Yet out of its basic notion has sprung first *The Morning*, then the *Daily Mail*—and, I believe, "there are others." So that now, when Lord Northcliffe has taken over *The Times* with his customary push, it seems, somehow, according to the fitness of things.

It is obvious that the reason why men fail is because they have omitted to think of the obvious. While wearisome sages are thinking on the question of perpetual motion, somebody else invents the perforating machine, whereby you can tear stamps, cheques, receipts, etc., apart, and by this simple device earns an ample reward. I forget the name of this gentleman, but I know he "did better than," shall we say, Archimedes.

Fame Sometimes Accidental

Failure cannot be judged until the flight of time has proved the event. Doubtless Blackmore thought "Lorna Doone" a "failure"—wonderful novel as it is—and he was not far wrong, until the marriage of the Marquis of Lorne established a connection in the public mind between the two entirely different happenings. The public bought "Lorna" on the strength of Lorne, and, by sheer accident, brought fame and fortune to the great author. That is why "Lorna Doone" did not "fail," quite apart, of course, from its own charm.

In a general summary failure in most walks of life is due primarily to an absence of preconceived determination in one sense, and an absence of pluck in another. Half the schemes of men in early life "Gang aft agley" because the

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simple plan of the architect is not resorted to. The man who starts to build a house with bricks and mortar, without his architect's plan, as a basic proposition is doomed to failure, and a jerry-built, unreliable proposition. The man likewise who starts on the railroad of life without some fixed goal in view, with pluck and determination to carry it through, ends equally disastrously.

Half the great successes in commercial life are achieved by men who use no greater note-book than a half-sheet of note-paper on which they note down their daily routine. They make up their mind to carry out a certain day's work, or week's work, or year's work, and so know where they are all the time. Apply it how you may the principle is the same. The routine must be applied to your daily work, your daily food, your daily finance.

Fate of the Railways After the War

While Impossible to Foresee Conditions, it is the Belief of This Authority That Government Ownership Will Not Be Adopted

By SAMUEL O. DUNN

(From the "Journal of the Canadian Bankers' Association")

The most interesting and important developments in any branch of industry since the great war began have occurred in connection with the operation of railways. The developments in the countries arrayed against Germany and her allies have been the most interesting. In Germany, Austria-Hungary and Bulgaria much the larger part of the railways already were operated by the government. The same thing was true in Italy. On the other hand, in Great Britain and the United States all of the railways, and in France and Canada most of them, were operated by companies. Government control of operation was adopted at once in France and Great Britain. After nine months of war it was adopted in the United States. In Canada the railways, both state and company owned, are being operated under the direction of a War Board voluntarily created by their managements.

What will be the future of the railways of France, Great Britain, the United States and Canada? This is a question of great moment from the standpoint of those who have capital invested in them, and also from that of the public. The advocates of government ownership confidently predict that the carriers will never be returned to private management. Many who oppose government ownership fear this will be the outcome. If the governments acquire the railways, will their security owners be fairly dealt with? Is it probable that government ownership will be adopted?

Owners to Receive Value

There is much talk of "conscripting" wealth. The suggestion is openly made in some quarters that if the railways are acquired the amount paid for them should be less than their actual value. There is, however, nothing in the past history of France, Great Britain, Canada or the United States which suggests that the owners would receive less than the roads are worth. The French Government always has dealt fairly, and even generously, with the private railways of that country, having made them satisfactory guarantees of return and paid a reasonable price for the Western Railway on taking it over. The Anglo-Saxon sense of justice revolts against anything savoring of confiscation. When the British Government took control of the railways it guaranteed them the largest annual return they had ever earned. The basis of compensation fixed by the railroad control law of the United

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States is the average earned in the three years ended on June 30, 1917. This is as fair a basis as could have been taken. The statesmen and the people of Anglo-Saxon countries know that in the long run the nation that confiscates property will lose more than it will gain. Therefore, it is altogether probable that if government ownership is made the settled policy of France, Great Britain, Canada or the United States, the owners of securities representing actual investment will be paid fairly for them. There is very little more reason why owners of railway securities should regard the prospect of government ownership with apprehension than why other people should. They have little more to fear from it.

Experiments in Government Operation

What, then, are the prospects of government ownership? Certain influences since the war began have affected all the railways of the world similarly, although in different degrees. It has been a period of unprecedented advances in wages, in prices of materials and equipment, and in other operating expenses. In some countries this has resulted in the railways incurring large deficits. In others deficits have been prevented only by advances in rates. In Great Britain the Government has not paid for transportation rendered itself, and it is not known whether if it had paid the normal rates it would have had a deficit or not. There is reason for believing that it would have. In other words, the British railways on present rates are not self-supporting. This is true also of the French railways, and of the Government and some of the private railways of Canada. The railways of the United States under Government operation were rapidly incurring an enormous deficit, but the Government has advanced all passenger and freight rates 25 per cent. or more, which will bring in an increased revenue of about \$900,000,000 a year.

How large a part of the increased railway expenses will continue after the war no one can foretell. Wages, at least, will never return to the pre-war basis. If railways which were privately managed before are to be privately owned and managed hereafter, the governments will have to guarantee their net return, or let them charge higher rates than in the past. If the public revolts against paying higher rates to, or the deficits of, private companies, government ownership will be the only alternative.

When the war is over, however, all the governments will be burdened with enormous debts. The acquisition of the railways would largely augment these debts and the interest on them. Any rates which would not be high enough to keep private companies from having deficits would not be high enough to keep the governments from having railway deficits unless government operation were more economical than private operation.

Prospects of Government Ownership

One of the most interesting results of the war is that it is causing some countries to try the experiment of government operation without first having adopted government ownership. This is particularly true in the United States. England is not trying government operation, but merely control of it, the actual operation having been left in the hands of the general managers of the companies. In the United States, with the largest mileage in the world, a mileage one-third that of the entire globe, the companies have been set entirely aside, and Federal managers have been put in charge.

The railways of the United States were being efficiently managed, and their rates were on the lowest basis ever known before government control was adopted. The American public now fully recognizes the fact that they would have shown even better results under private management if they had been relieved of regulative restrictions from which govern-



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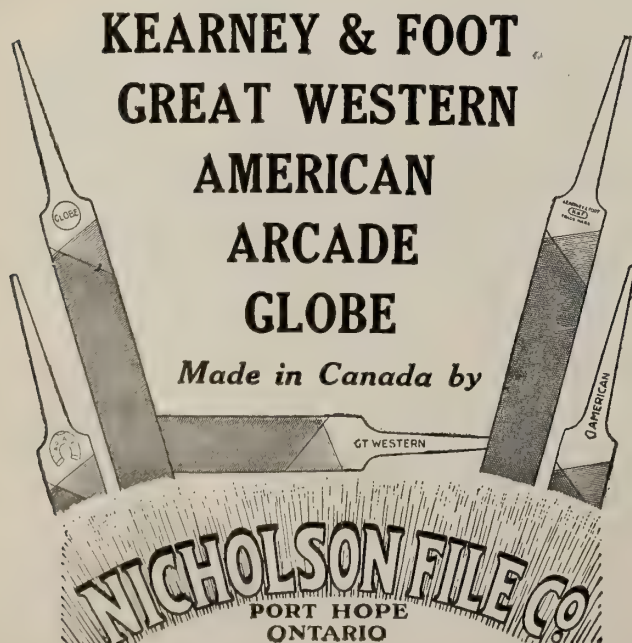
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ment operation is free. That the operation of the railways of France, Great Britain and the United States under government direction during the war will be efficient is probable. But the public will understand why this is the case, and that the results gained in war are no measure of those that would be gained in peace. The experienced railway officers in all these countries have put their services at the disposal of the governments; and their freedom from regulative restrictions is a great aid. That government operation will be as much more efficient and satisfactory than private operation, as the advocates of government ownership have contended it would be, is most improbable. Nothing short of a series of miracles would secure the results the advocates of government ownership have predicted.

While it is impossible to foresee the conditions that will exist after the war, it is now my firm belief that government ownership will not be adopted in the United States. I doubt if it will be the outcome in other countries with which our own is allied. There was much government ownership sentiment in the United States before the adoption of government operation. There has been no increase, but a marked decrease of it recently. Formerly it was the railway managements that were on trial. Now it is the government. Even though the government does as well as is humanly possible, it will cause disappointment. The advocates of government ownership had contended that \$400,000,000 or \$500,000,000 a year could be saved in the United States in operating expenses by government operation. Five months after the beginning of government operation advances in rates of \$900,000,000 a year are announced. It is easily possible to explain and defend this—but not on the theories formerly advanced by advocates of state ownership.

It is an interesting fact that in the year before the war began over 80 per cent. of the railway mileage of Germany, Austria-Hungary, Bulgaria and Turkey was owned by the governments, while 95 per cent. of the mileage in Italy, France, Great Britain, Canada and the United States was owned and operated by private companies. Private ownership and management is more consistent with democratic principles than is government ownership and management. It would be a strange outcome of war "to make the world safe for democracy" if it should result in an increase of government ownership in democratic countries.

Planning Factory Water Supplies

Cases Known Where Serious Loss Has Actually Occurred Because of Drawing Down Tanks of From 50,000 to 100,000 Gallons Capacity, the Supply Giving Out in the Course of a Fire

By CHARLES F. WORTHINGTON

(From the Quarterly of the N. F. P. Association)

There exists at the present moment a large manufacturing property with an up-to-date sprinkler equipment. It is an extensive property representing an investment of millions of dollars in an important industry, and even a serious interruption of its activities at this time would approach a calamity. It is not necessary to state what or where it is, since it is typical of many others where conditions are almost precisely the same, and as no criticism is directed at this particular property in itself, identification is not desirable.

The plant in question embraces many buildings, some of very large area, and many of good fire-resistive construction, arranged regularly along streets or passages ranging from thirty to fifty feet in width, these "streets" and "passages"

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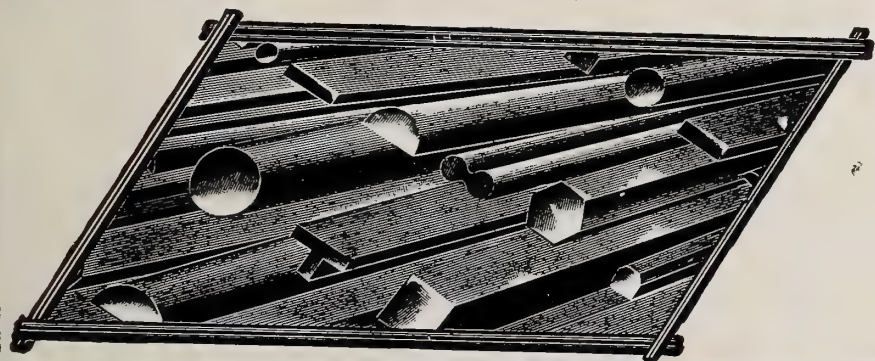
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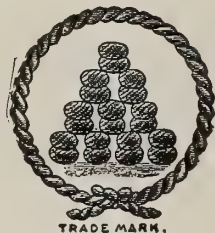
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being wholly within the yard or premises, and private. All the buildings of consequence are sprinklered. There is a frontage on three streets, on all of which are gridiron public mains ranging from eight inches to sixteen inches in diameter. There are a good fire department with more than eight available steamers, fire alarm telegraph, and paved streets.

A Threefold Water Supply

The water supply is threefold—first, city water taken from circulating mains at two points by 8-inch connections, the 8-inch private main forming a principal artery about 2,200 feet long, with one right angle, there being a secondary parallel 8-inch main well tied in with 6-inch and 8-inch crossings and some 6-inch branches. Second, an elevated gravity tank of 80,000 gallons capacity, with an elevation of about 150 feet connected in near the apex of the angle. Third, a 1,500-gallon duplex Underwriter pump in fire-resistive power house also connected in near one street connection. Street connections are properly checked off and all sprinkler systems and hydrants taken from the private main, with post gate control on sprinklers. Hydrants, standard two and three-way with hose connections only, plenty of hose and good mill brigade.

At first glance the equipment and water supplies appear almost redundant, but upon a further consideration we are not so sure.

The fire-resistive structures of large area contain in some cases considerable quick-burning contents, and the opening of as many as one hundred sprinklers by one entirely controllable fire is not at all impossible—is, in fact, a conservative estimate. This number of sprinklers at an average discharge of fifteen gallons per head would require the full capacity of the pump, with no margin for hydrant service.

It is not advisable to draw to any extent upon the tank. That piece of apparatus is a reserve service to give preliminary pressures and to serve as a main supply in case other apparatus fails during a fire. Its exhaustion in the earlier stages, therefore, would practically eliminate the service for which it was designed, and would be equivalent to throwing the reserves of an army into the firing line on the beginning of a battle.

There remains then the city supply. Disregarding loss by friction in the city mains, the loss in the 8-inch main with a flow of 1,500 gallons would be destructive, while a reasonable probability exists that twice that amount might be desired for effective hydrant service.

Error Made in the Plans

It is fairly clear, or will be when the analysis is complete, that there is an error in the plans, and that error is confined solely to the size of the main private pipe, which, to provide for possible auxiliary supplies and reduce friction, should have been at least ten inches, or preferably twelve inches in diameter. The larger size is necessary, not to take care of ordinary conditions, for which the 8-inch pipe is ample, but for extraordinary conditions, for the unexpected, and this without the slightest regard to the diameter of the supplying street mains; otherwise too much of the supply and energy available would be lost in friction.

Enter the chief of the local fire department, who in a manner recognizes that in the event of a severe fire both volume and pressure would be insufficient, but concerns himself chiefly with pressure, regarding volume only in a vague way. He has grasped the situation in part, but not fully.

His request is the substitution of hydrants having steamer connections for the pressure hydrants (a request



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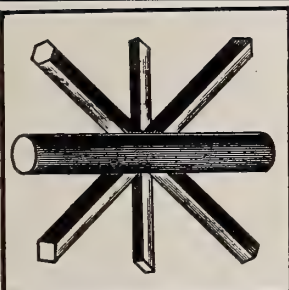
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which is diametrically opposed to the opinion of other chiefs, but perhaps illustrates the prevailing fire department idea), with a view to entering the private streets and connecting to these hydrants.

It is clear at the outset that this is only a makeshift to get pressure at particular points, since the withdrawal of water by engine suction from a private main would reduce the pressure as much as a similar volume of withdrawal by other means, but would not increase the inflow by a single gallon. It would simply be picking up water already on the premises to obtain pressure in a contingency where both volume and pressure are equally required, and if there is any advantage it is only partial.

Free Movement Essential

But there are other unconsidered features. A pumping engine is a bulky apparatus, and even when stationed in an 80-foot street obstructs movement of apparatus in the street. In event of a severe factory fire, free movement within the yard is a prime essential, and the stationing of such apparatus would prove a very serious obstacle to the needed celerity of movements.

The pumping range of a steamer may be stated as 400-foot radius to secure good results—in practice it is less rather than more. Hence it might be necessary to move the engines now and then, each removal interrupting service and taking men from other work.

A steamer is a costly piece of apparatus, and its forced abandonment not only involves considerable loss, but it may cripple present operations and is certain to impair the fire department service more or less for some time. The stationing of engines under the walls of large buildings is a dangerous proposition. Steam operated pumping engines

emit sparks and frequently originate new fires, while the smoke is always an unwelcome addition to existing smoke, and the noise is distracting.

It may be remarked in passing that the loss of from one to four steamers under somewhat similar conditions is not unknown.

A steam fire engine is merely a pump on wheels, and it can be applied to any uses appropriate to a pump of its class, since, when once in use, it becomes for the time being a stationary pumping engine.

The objection to stationing steamers within the factory yard appear practically insurmountable, and ordinarily the need of so doing is not apparent, since the same engines may be stationed on the public streets and pump into the private mains, simultaneously raising the pressure at all points and increasing the volume of supply by introducing water that could not otherwise be brought into the mains.

The best method of doing this is by installing "reverse hydrants" at appropriate points, a "reverse hydrant" being a standard hydrant, two-way or four-way, *without steamer connection*, from which the usual male threads and couplings on the 2½-inch connections have been removed and female couplings substituted, thus permitting one or two engines to attach to the hydrant by short lines of hose, and pump *into* the hydrant instead of *drawing from it*, thus establishing for the time a direct high pressure local pumping system limited to the factory mains.

Placing of the Hydrants

The arrangement is by no means a complicated one, and involves merely the placing of hydrants connected into the mains, each connection being checked off as well as the intake between the hydrant connection and the city main, and the establishing (usually) by the city or town of special service hydrants at an adjacent point.

These service hydrants are necessarily placed approximately twenty-five feet from the reverse hydrants, and on the same side of the street to admit of use of 50-foot lengths of 2½-inch hose for connecting. They are simply ordinary hydrants with one or two steamer connections and no 2½-inch hose connections, the number of connections per

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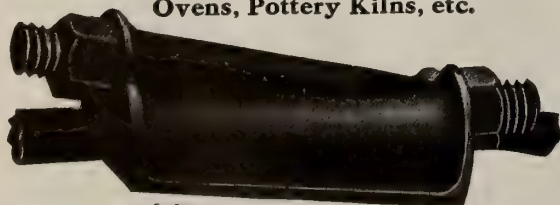
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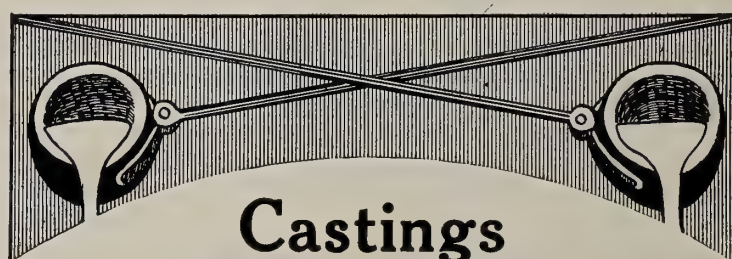
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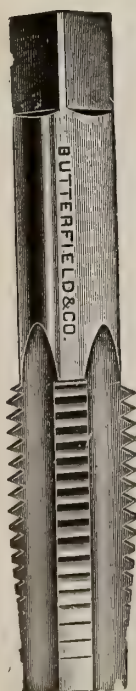
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hydrant and of hydrants being proportional to possible engines to be employed, which in turn depends on the sizes of mains.

The advantages of the reverse hydrant over "Siamese" are several. The form of apparatus is familiar to firemen, leaving only the fact of the "reverse" to be understood and memorized. The hydrants are self-draining and consequently always ready for use, and are not liable to derangement, requiring less care than ordinary hydrants, since they need not be "flushed." The cost of a four-way hydrant is slightly less than that of a four-way Siamese similarly connected, and the hydrant weathers better. Such hydrants should always be designated by conspicuous signs.

By this method every advantage of increased pressure is obtained, with the additional advantages of comparatively unobstructed streets and passages within the factory yard (a matter of very great importance). The water supply is increased; the safety of steamers is assured; there is no shutting down or removal when the locality of needed pressure changes; there is less delay in connecting in, and the additional noise and smoke and the spark hazard are avoided. *And the tank supply cannot be drawn down or exhausted by steamers.*

This method is applicable in degree to nearly all large factory equipments, and often may be substituted with advantage for Siamese directly connected to sprinklers, although, like any other method of supply, it is not universally applicable, and the need of competent engineering advice is not by any means eliminated, as many questions of ultimate capacity of mains and the like constantly arise and are not usually solvable by fire chiefs, since they concern details about which only engineers are generally well informed. It is always possible, however, to push *more* water through a pipe than you can *pull* through it. Nor is it new and untried, being in use with the strong approval of the fire departments in a large number of properties.

Service and Reverse Hydrants

The service hydrants should always, if possible, be on the same side of the street as the reverse hydrants, to avoid interruption to street traffic, and suitable instructions to fire companies as to coupling should be properly posted by the fire department.

It may be said in closing that the introduction of suction hydrants into a yard service which is supplied by a gravity tank appears essentially vicious in principle and involves "pumping in a circle," and that in any case taking water from the system within the yard merely to increase pressure at a single point is little better.

Increase of pressure uniformly supplied, coupled with an increase of volume, is always desirable, if only as an auxiliary, the use of which is not expected and is only probable in extremity. There cannot be too many resources, and the "ordinary adequate" cannot be expected to provide for unanticipated but possible emergencies, and since the total expense of this auxiliary protection is very small, it would seem advisable to employ it more largely, even where its use is considered very improbable.

There is another important point connected with gravity tank supply. The functions of this tank are to furnish (in some cases) initial pressure, and to act always as an equalizer and take up the supply when temporarily cut off—hence drawing down or emptying it *except for emergency or initial service puts it to improper use*, and its limited capacity forbids such other use.

It seems needless to quote specific instances where serious loss has actually occurred because of drawing down tanks of

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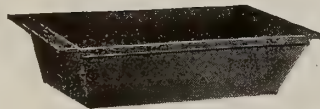
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from 50,000 to 100,000 gallons capacity, the supply giving out in the course of a fire. It has occurred in several cases, but mention of the oversight (since remedied) is unpleasant to all concerned.

The method outlined above can be used to success even when the main connection is a 6-inch connection from a 6-inch circulating main limiting to two engines taking suction from opposite side of intake, one main object being to get all the water there is to be obtained into the private mains, where it will be of service and at high pressure.

As a matter of interest, a letter on this subject from an exceedingly competent official of a large city fire department is appended, merely as confirmatory evidence of advanced fire department attitude.

MR CHAS. WORTHINGTON. Boston, Mass., June 2, 1918.

Dear Sir:—In matter of fire protection for large industrial or manufacturing plants it is a well-known fact that efficient fire protection depends largely on the water supply, which must be ample under the most adverse conditions.

We have throughout the country many of these large manufacturing or producing plants that are equipped with sprinkler systems and local yard hydrants, dependent for supply upon take-offs from larger city mains. In many instances this supply and pressure are increased by auxiliary pumpage of limited capacity ranging from 750 to 1,500 gallons per minute. Superficially this may appear to have been sufficient, but in my experience I have found on several occasions such supply and pressure to be totally inadequate, especially when the water mains were not of sufficient size to properly supply the system under fire service conditions. Summing up the situation, this is a plain everyday mistake of the engineer installing. As a matter of fact, in an extensive plant at least a 12-inch main or—much better—a 16-inch main should do the work now expected of an 8-inch main, the difference in cost being negligible, the results ample.

It is a recognized fact that the elevated tank gravity system for sprinklers is the best for primary protection to stop or hold a fire in its incipency.

I do not believe that it is the intention of any chief to impair his reserves, but I know that he will do so if he connects fire engines to private hydrants in plant yards.

This would render the private pumps inefficient, in that the fire department steamers would be apt to draw enough water from the supply to weaken the much-needed pressures they could furnish, and doubtless would furnish, if the engines were assisting rather than retarding their effort by attaching to small mains within the yard. If the fire department steamers could connect to city service mains and push their capacity through "reverse" hydrants into mains located near the city service supply hydrants, you could expect an adequate supply both in volume and pressure to manipulate many more fire streams efficiently directly from the yard hydrants, with much shorter hose lines, which means a tremendous saving in friction loss and more efficient nozzle pressures.

Two or three of these intake hydrants would be sufficient, as each hydrant would take the supply from two steamers; and each additional hydrant would mean at least two additional steamers. Assuming that each steamer or pumper could supply from 750 to 850 gallons per minute or more, it is a very simple matter to determine capacity needed.

With the "reverse" system located on our large manufacturing plants a high pressure would always be available, with the portable pumps (steamers) ready for immediate use. Long lines of hose would be eliminated; engines would be remote from the immediate vicinity of the fire; a clearance in and about the building on fire would thereby permit rapid manœuvring without hindrance to the fire department. It would mean a reduction in further cause of fire from sparks from the steamers and in many ways lessen the anxiety of the chief in his work, and more satisfactory results would obtain.

I will say that we have, in our city, in operation a system such as you have described. To say that it is efficient is not enough. It is a success.

Remember one thing: The bleeding of any first aid invites calamity, especially where fire is concerned.

Respectfully,

JOHN O. TABER,

Senior Deputy Chief, Boston Fire Department.

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213 Board of Trade Building, Montreal

Japan's Growing Industries and Trade

The Country is Becoming More and More Self-Contained, While Exports are Increasing by Leaps and Bounds

(From the "Scientific American")

It is generally conceded that one of the keenest competitors of the United States in the great after-war trade will be Japan. That country has in recent years been far from a negligible factor in the world's trade, but such impetus has been given to all its industries recently that it is destined to play a much more important part in international business than ever before. Consequently, the changes and growth in its trade are of interest to American manufacturers and exporters.

The foreign trade of Japan for the first three months of the current year showed a total of 787,832,216 yen (about \$394,000,000), for exports and imports, according to figures prepared by the Tokio Department of Finance. This compares with 544,121,680 yen (\$272,000,000) for the same period last year. The total exports for the three months amounted to 397,316,203 yen (about \$199,000,000), which compares with 317,724,192 yen (\$159,000,000) for the first quarter of the year 1917. The merchandise imports totalled 390,516,013 yen (\$195,000,000) for the three months, as against 226,397,488 yen (\$113,000,000), for a similar period a year ago.

In a recent issue of the *British Board of Trade Journal*, some of the new industrial prospects in Japan are described. The probabilities of a development in the coal industry have been enhanced by the discovery of an extensive deposit of anthracite in the vicinity of the Maizuru Admiralty Port near Tsuruga. The deposit, it is stated, extends over an area of 25,000,000 tsubo, and lies in eight strata, each of which is 10 to 20 feet deep and contains five rows of veins.

Japan's Paint Industry

Prior to the war, Japan had become self-supplying as regards paints, except in the case of special lines, for example, ship's bottom paint, varnish, etc. A small export business had even been initiated, and orders for paints had commenced to arrive from China, the Dutch East Indies, India and Australia, owing to the suspension of imports into those countries from the United Kingdom. The value of the exports of paints from Japan rose from 70,643 yen in 1913 to 236,484 yen in 1916.

Since the beginning of the war a number of Japanese paint factories have been extended and several new factories have been built, while it is proposed to establish still others. A company is to be established in Kurume, Kyushu, for the manufacture of industrial chemicals and paints. A share capital of 500,000 yen has been subscribed. From the vegetable wax, of which there are abundant supplies in the neighborhood, it is proposed to manufacture glycerine, stearine, pitch and soap wax. Other products will be potassium permanganate, potassium carbonate and paint.

It is proposed to establish a factory at Sapporo in the Hokkaido for the manufacture of starch from potatoes and grain. The company responsible for this venture is stated to have a capital of 1,500,000 yen. The estimated annual output of the factory is given as 6,000,000 pounds of first grade and 500,000 pounds of second grade starch; and 2,000,000 pounds of first grade and 600,000 pounds of second grade corn starch. This will be an entirely new industry in the Hokkaido.

The five plants of a Japanese company are at present working at full capacity and are turning out annually 12,000,000 yards of linen cloth and 17,000,000 pounds of yarn.

Mr. Manufacturer

The Canadian Northern Railway System — serving the great producing areas and important commercial centres in Canada— invites you to test its service.

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TRADES AND LABOUR BRANCH

NOTICE

The following are the Factory Inspectors for the Province of Ontario:

JAMES T. BURKE, Chief Inspector, Toronto
W. T. E. BRENNAGH, Port Arthur.
H. A. CLARK, Toronto.
MISS M. CARLYLE, Toronto
W. S. FORSTER, Ottawa
A. W. HOLMES, Toronto
ROBT. HUNGERFORD, Toronto
FRED KELLOND, Hamilton
S. J. MALLION, Stratford
MRS. A. BROWN-REDDICK, Toronto
H. J. TUTT, Toronto

Persons having business with any of the Inspectors should communicate with them at the Parliament Bldgs., Toronto.

W. A. RIDDELL, M.A., Ph.D., HON. F. G. MACDIARMID,
Superintendent. Minister of Public Works
and Highways.
Phone Main 5800



TRADES AND LABOUR BRANCH

NOTICE

To Manufacturers, Dealers, and Users of Steam Boilers

All steam boilers built in, or entering the Province of Ontario, and boilers exchanged or repaired, are subject to Government Inspection as prescribed in the Steam Boilers Act, 3 George V., C. 61.

Before any work of repair or alteration is commenced on any boiler, notice must be sent to the Department stating the nature and extent of the repairs or alterations proposed to be made. If the Chief Inspector should consider such repairs or alterations of an extensive character, the boiler must be inspected in accordance with the Regulations by an Inspector authorized under the Act.

All communications should be addressed to the Steam Boiler Branch, Department of Public Works, Parliament Bldgs., Toronto.

HON. F. G. MACDIARMID, D. M. MEDCALF,
Minister of Public Works. Chief Inspector of Steam Boilers.
W. A. RIDDELL, M.A., Ph.D., Superintendent.

TRADES AND LABOUR BRANCH

NOTICE

TO STATIONARY AND HOISTING ENGINEERS

Everyone operating a STATIONARY steam plant of 50 h.p. or over in the Province of Ontario must hold a Stationary Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Everyone operating a HOISTING steam plant working at a pressure of 20 pounds or over irrespective of horse power, and used for hoisting in structural operations or excavating purposes, in the Province of Ontario, must hold a Hoisting Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Application forms for obtaining STATIONARY or HOISTING Engineers' Certificates, may be had upon applying to the Chairman.

HON. F. G. MACDIARMID, W. C. MCGHIE,
Minister of Public Works and Highways. Chairman of Board.
W. A. RIDDELL, M.A., Ph.D., Superintendent.

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THOS. C. IRVING, Gen. Man. Western Canada, Toronto

They are manufacturing flax goods only and some of the plants are being operated day and night. A new plant is in course of erection at Shinkoyasu, which will be utilized for making jute goods only, the annual output being estimated at 7,000,000 yards of hessian cloth, 4,500,000 pieces of gunny bags and 1,000,000 pounds of yarn.

Before the war the export of clocks from Japan was valued at from 700,000 yen to 800,000 yen per annum. Of recent years the volume of exports has increased as the supply of German clocks was cut off, and in 1916 exports in this line from Japan were valued at 1,180,000 yen. During the last three-and-a-half years Japanese clocks have been exported to China, India, the South Sea Islands, and even to the United Kingdom, France, Italy and the Straits Settlements, and it is believed that some portion of this new trade will be retained after the war.

It appears that watches are manufactured by only one Japanese firm, although a few other firms are making cases and importing movements and other parts. Prior to the war imports of watches into Japan were valued at about 1,300,000 yen per annum, and this level will probably be maintained for some years to come.

Finally, a firm has been making preparations for the manufacture of chromic acid at its factory at Toyosakimachi, near Osaka. It is reported that arrangements have now been completed and that goods will be placed upon the market in the near future. As regards the supply of raw material, the firm is stated to have recently concluded an agreement for the import of chrome ore from abroad, as the Japanese ore does not contain a sufficient percentage of metal.

Canada's Coal Supply

Since 1874 Imports of Coal Have Increased
Much More Rapidly Than Domestic Production

The coal supplies of Canada are second only to those of the United States in quantity, and compare favorably with those of other great coal-mining countries in quality, quantity and accessibility for mining purposes. The known area in Canada underlain by workable coal beds is estimated by Mr. D. B. Dowling at 111,168 square miles, containing over 1,300,000 million tons of coal. For convenience in classifying, the coal fields may be divided into four main divisions, as follows:

- (1) The Eastern Division, comprising the bituminous coal fields of Nova Scotia and New Brunswick.
- (2) The Central or Interior Division, comprising the lignites of Manitoba and Saskatchewan, and the lignites, sub-bituminous, bituminous and semi-anthracite coal fields of Alberta, as well as the bituminous coal fields of the Rocky Mountains in south-eastern British Columbia.
- (3) The Pacific Coast Division, comprising the bituminous fields of Vancouver Island, the bituminous and semi-anthracite fuels of Queen Charlotte Island and the interior of British Columbia, and the lignites of Yukon.
- (4) The Northern Division, comprising the lignites and low-grade bituminous coal of the Arctic-Mackenzie basin.

The coal-mining industry of Canada has developed at a very rapid rate. In 1874, the earliest year for which there is a reliable record, the production was 1,063,742 tons. In 1916 it amounted to about 14,500,000 tons. But in spite of this striking development, imports have increased faster than production. In 1916, they exceeded 17,000,000 tons, or over 53 per cent. of the total consumption for that year.

When it is remembered that Central Canada is dependent on the United States for supplies of coal, the desirability of changing these conditions becomes apparent, both from a mining and a national standpoint.—W. J. D.



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BENZINE



WHITE LEAD

READY MIXED
PAINT

COLORS IN
OIL

VARNISHES

BLACK
JAPANS

STEEL BRIDGE
PAINTS

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PAINTS

CUP GREASE

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REMEMBER, a motor doesn't "lay down" or slow down like any other machine, when overloaded. It works right up to the breaking point. Give it a chance. Avoid slow, costly repairs and profit-killing shut-downs—the country needs your product. Have your motors inspected regularly. It needn't take long nor cost much. It will be one of the most profitable investments you ever made.

Toronto Hydro-Electric System

226 Yonge St.

Branch—Gerrard and Carlaw

Buyers' Guide to Canadian Manufactures

A List of Articles which will Enable the Purchaser to Know the Manufacturers of Made-in-Canada Goods. For Rates of Insertion in this Department write to the Advertising Manager of "Industrial Canada," Toronto

ABRASIVES

- *D. A. Brebner, Ltd., Toronto.
- *Canadian Hart Wheels, Ltd., Hamilton, Ont.
- *Dominion Abrasive Wheel Co., New Toronto, Ont.

ACCOUNT BOOKS

- *The Brown Bros., Ltd., Toronto.

ACETYLENE GAS

- *The Prest-O-Lite Company.

ACETYLENE GAS BURNERS

- Economic Acetylene Burner Co., Toronto.
- *The Prest-O-Lite Company.

ACIDS

- *The Grasselli Chemical Co., Ltd., Toronto.
- *The Nichols Chemical Co., Ltd., Montreal.

ADVERTISING NOVELTIES

- Lawson & Jones, Ltd., London, Ont.

AGGREGATED BEVERAGES

- Charles Gurd & Co., Ltd., Montreal, Que.
- J. J. McLaughlin, Ltd., Toronto.

AIR COMPRESSORS

- *Canadian Ingersoll-Rand Co., Montreal, Que.
- *Smart-Turner Machine Co., Ltd., Hamilton, Ont.

AIR DRILLS

- *Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

ALCOHOL

- *Hiram Walker & Sons, Limited, Walkerville, Ont.
- *H. Corby Distillery Co., Limited, Montreal.

ALUMINUM

- *Northern Aluminum Co., Ltd., 1805 Traders Bank, Toronto.

ALUMINUM CASTINGS

- *Tallman Brass & Metal Co., Hamilton, Ont.
- *United Brass & Lead, Ltd., Toronto

AMMONIA

- Canadian Ammonia Co., Ltd., Toronto.

ANGLE BARS

- *Burlington Steel Co., Ltd., Hamilton, Ont.
- *Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.
- *The Steel Company of Canada, Limited, Hamilton, Ont.

ASBESTOS:

- *Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEATHING:

- *Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEET AND PISTON PACKINGS

- *Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS STEAM PIPE AND BOILER COVERINGS

- *Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS TEXTILES:

- *Eureka Mineral Wool & Asbestos Co., Toronto.

ATTACHMENT PLUGS

- *Crouse-Hinds Co., Ltd., Toronto.

AUTOGRAPHIC REGISTERS

- *Autographic Register Co., Ltd., Montreal.

AUTOGRAPHIC REGISTER SYSTEMS

- Business Systems, Ltd., Toronto.

AUTOMATIC SCREW MACHINE PRODUCTS

- *United Brass & Lead, Ltd., Toronto

AUTOMOBILE ACCESSORIES,

- *Northern Electric Co., Limited, Montreal.
- *Tallman Brass & Metal Co., Hamilton, Ont.

AUTOMOBILE PARTS

- *Dominion Forge & Stamping Co., Walkerville, Ont.
- *United Brass & Lead, Ltd., Toronto

AWNING CORD (cotton)

- Hamilton Cotton Co., Hamilton, Ont.

AXLES

- Canada Forge Co., Ltd., Welland, Ont.
- Guelph Spring & Axle Co., Ltd., Guelph, Ont.

AXLES, carriage and automobile

- Guelph Spring & Axle Co., Ltd., Guelph, Ont.

BABBITT METAL

- Alonzo W. Spooner, Limited, Port Hope, Ont.

- *Dominion Metal Co., Ltd., Sherbrooke, P.Q.

- *The Canada Metal Co., Toronto.

- *Tallman Brass & Metal Co., Hamilton, Ont.

BACON

- E. W. Fearman Co., Ltd., Hamilton, Ont.

BAGS

- *Scythes & Co., Ltd., Toronto.

BAGS, Cotton

- The Canadian Bag Co., Ltd., Montreal, Que.

BAGS, jute

- The Canadian Bag Co., Ltd., Montreal, Que.

- *Scythes & Co., Ltd., Toronto.

BAGS, travelling

- J. Eveleigh & Co., Ltd., Montreal, Que.

- Lamontagne, Ltd., Montreal, Que.

- The M. Langmuir Mfg. Co., of Toronto, Ltd., Toronto.

BAKING JAPAN

- *Berry Bros., Ltd., Winnipeg, Man.

BAND RESAWS

- *Canada Machinery Corporation, Limited, Galt, Ont.

- *P. B. Yates Machine Co., Ltd., Hamilton, Ont.

BAND SAWS

- *E. C. Atkins & Co., Inc., Hamilton, Ont.

BANK FITTINGS

- The Canadian Office & School Furniture Co., Ltd., Preston, Ont.

BANK AND OFFICE RAILINGS AND CAGES

- *Canada Wire and Iron Goods Co., Hamilton, Ont.

- *Dennis Wire & Iron Works Co., London.

- *The Geo. B. Meadows, Toronto, Wire, Iron & Brass Works Co., Ltd., Toronto.

- *Canada Wire and Iron Works, Hamilton, Ont.

BANK SIGNS AND FITTINGS

- *Tallman Brass & Metal Co., Hamilton, Ont.

BARRELS, steel, and containers

- *Smart-Turner Machine Co., Ltd., Hamilton, Ont.

BARS, iron

- London Rolling Mill Co., Limited, London, Ont.

BARS, steel

- London Rolling Mill Co., Limited, London, Ont.

BASEBALL GOODS

- A. J. Reach Co., Brantford, Ont.

BATHS, enamelled

- Amherst Foundry Co., Ltd., Amherst, N.S.

BATTERIES, dry

- The Canadian National Carbon Co., Ltd., Toronto.

BATTERIES, Flashlight

- The Canadian National Carbon Co., Ltd., Toronto.

BATTERIES, Storage

- The Canadian National Carbon Co., Ltd., Toronto.

BEARINGS

- *The Chapman Double Ball Bearing Co., Ltd., Toronto.

- *The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEARINGS, bronze

- *Tallman Brass & Metal Co., Hamilton, Ont.

- *United Brass & Lead, Ltd., Toronto

- *Canadian Fairbanks-Morse Company, Ltd., Montreal, Que.

- *Dodge Mfg. Co., Ltd., Toronto.

- *The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEDS, camp folding

- *Otterville Mfg. Co., Ltd., Otterville, Ont.

BEEF

- E. W. Fearman Co., Ltd., Hamilton, Ont.

BELTING, chains

- *Canadian Link-Belt Co., Toronto.

- *Dodge Mfg. Co., Ltd., Toronto.

- *The Goldie & McCulloch Co., Ltd., Galt, Ont.

BELTING, elevator

- *Canadian Consolidated Rubber Co., Ltd., Montreal, Que.

- Dunlop Tire & Rubber Goods Co., Ltd., Toronto.

BELTING, leather

- The Beardmore Belting Co., Ltd., Toronto.

- *J. L. Goodhue & Co., Danville, P.Q.

- *Sadler & Howarth, Montreal.

- *The D. K. McLaren Belting Co., Ltd., Montreal.

- *The J. C. McLaren Belting Co., Ltd., Montreal.

BELTING, rubber

- *Canadian Consolidated Rubber Co., Ltd., Montreal, Que.

- *Dunlop Tire & Rubber Goods Co., Ltd., Toronto.

- *Gutta Percha & Rubber, Limited, Toronto.

BELTING, stitched cotton duck

- *Dominion Belting Co., Ltd., Hamilton.

BENT GOODS

- The Crown Lumber Co., Woodstock, Ont.

BICYCLES AND ACCESSORIES

- *Canada Cycle and Motor Co., Ltd., Toronto.

BISCUITS

- The Montreal Biscuit Co., Montreal, Que.

BLACK SHEETS

- *A. C. Leslie & Co., Montreal.

BLANKETS

- Slingsby Mfg. Co., Ltd., Brantford, Ont.

- J. Walsham & Son, Ltd., Bolton, Ont.

BLANKETS, horse

- Slingsby Mfg. Co., Ltd., Brantford, Ont.

- J. Walsham & Son, Limited, Bolton, Ont.

BLASTING ACCESSORIES

- Canadian Explosives, Ltd., Montreal, Que.

BLEACHING POWDER

- Canadian Salt Co., Ltd., Windsor, Ont.

BLOWERS

- *Sheldons, Ltd., Galt, Ont.

- *The Canadian Blower & Forge Co., Limited, Kitchener, Ont.

- *Beveridge Paper Co., Limited, Montreal.

BOARDS, wood, binder, fibre specialties

- *Beveridge Paper Co., Limited, Montreal.

BOATS OF ALL KINDS

- Peterboro Canoe Co., Ltd., Peterboro, Ont.

BOILER COMPOUND and OILS

- Electric Boiler Compound Co., Ltd., Guelph, Ont.

BOILER PRESERVATIVES

- *Beveridge Paper Co., Limited, Montreal.

BOILERS

- *M. Beatty & Sons, Ltd., Welland, Ont.

- *Darling Bros., Montreal.

- *Goldie & McCulloch Co., Limited, Galt, Ont.

- John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

- *Polson Iron Works, Ltd., Toronto.

- J. & R. Weir, Montreal, Que.

- Taylor-Forbes Co., Ltd., Guelph, Ont.

- *The Waterous Engine Works Co., Ltd., Brantford.

BOILERS, hot water or steam.

- Steel & Radiation, Ltd., Toronto.

- Warden King, Ltd., Montreal, Que.

BOILERS, steam.

- *Jenckes Machine Co., Sherbrooke, Que.

- *The Goldie & McCulloch Co., Ltd., Galt, Ont.

- *The Waterous Engine Works Co., Ltd., Brantford, Ont.

BOILERS, steam and brass work

- *The Waterous Engine Works Co., Ltd., Brantford, Ont.

BOILER STANDS

- Anthes Foundry Ltd., Toronto.

BOLSTERS

- *Canadian Car & Foundry Co., Ltd., Montreal, Que.

BOLTS AND NUTS

- *The Canadian Tube & Iron Co., Ltd., Montreal, Que.

- *The National Acme Mfg Co., Montreal, Que.

- *The Steel Company of Canada, Limited, Hamilton, Ont.

- Starr Mfg. Co., Ltd., Dartmouth, N.S.

- *United Brass & Lead, Ltd., Toronto

BOOKBINDERS

- R. G. McLean, Toronto.

- *The Brown Bros., Ltd., Toronto.

BOOKCASES

- *Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

BOOKCASES, sectional (Gunn)

- The George McLagan Furniture Co., Ltd., Stratford, Ont.

BOOKLETS

- R. G. McLean, Toronto.

BOOKS, blank

- *The Brown Bros., Ltd., Toronto.

BOOTS AND SHOES

- Ames-Holden-McCready, Ltd., Montreal, Que.

- J. Leckie Co., Ltd.

- The John Ritchie Co., Ltd., Quebec, Que.

BOXES

- *Crouse-Hinds Co., Ltd., Toronto.

BOXES, cellular board:

- *The Thompson & Norris Co. of Canada, Ltd., Niagara Falls.

BOXES, rattle and soap

- The Arlington Co. of Canada, Ltd., Toronto.

BOXES, steel shop

- *Steel Trough and Machine Co., Ltd., Tweed, Ont.

BOXES and SHOOKS, wooden

- The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

BOXES, wooden

- G. & J. Esplen, Montreal, Que.

- Barchard & Co., Ltd., Toronto.

BRAIDS AND TRIMMINGS

- The Moulton Mfg. Co., Limited, Montreal.

BRAKE SHOES

- *Canadian Hart Wheels, Limited, Hamilton, Ont.

BRANDS, burning

BRASS BOLTS AND NUTS

*Tallman Brass & Metal Co., Hamilton, Ont.
*United Brass & Lead, Ltd., Toronto

BRASS AND BRONZE WIRE

*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

BRASS, BRONZE and ALUMINUM LETTERS

*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS ENGRAVERS

Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS FOUNDERS AND FINISHERS

*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.

*Tallman Brass & Metal Co., Hamilton, Ont.

*United Brass & Lead, Ltd., Toronto

BRASS GOODS

*Penberthy Injector Co., Ltd., Windsor.

*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.

*Mueller Mfg. Co., Sarnia.

The Garth Co., Montreal, Que.

The James Morrison Brass Mfg. Co., Ltd., Toronto.

*The Kerr Engine Co., Ltd., Walkerville, Ont.

*Tallman Brass & Metal Co., Hamilton, Ont.

*United Brass & Lead, Ltd., Toronto.

BRASS PLATES

Geo. Booth & Son., Toronto.

*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS RODS

*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS RODS, SHEETS AND PLATES

*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

BRASS SIGNS AND MEMORIALS

*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS TUBING, seamless

Canadian Seamless Wire Co., Ltd., Toronto.

*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WIRE

Canadian Seamless Wire Co., Ltd., Toronto.

*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WORK, church

Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS WORK, special

Bawden Machine Co., Ltd., Toronto.

*H. Mueller Mfg. Co., Ltd., Sarnia, Ont.

*Tallman Brass & Metal Co., Hamilton, Ont.

*Booth-Coulter Copper & Brass Co., Ltd., Toronto.

*The Watrous Engine Works Co., Ltd., Brantford, Ont.

*United Brass & Lead, Ltd., Toronto

BRICK

National Brick Co. of Laprairie, Laprairie, P.Q.

Port Credit Brick Co., Port Credit.

BRICK, enamel

National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, pressed

National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, rubbing

*Canadian Hart Wheels, Limited, Hamilton, Ont.

BRICK, sewer

National Brick Co. of Laprairie, Laprairie, P.Q.

BRIDGES, Railway and Highway

*Dominion Bridge Co., Montreal.

*Hamilton Bridge Works Co., Ltd., Warkerville, Ont.

*The Canadian Bridge Co., Ltd., Hamilton, Ont.

*McGregor & McIntyre, Ltd., Toronto.

*Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.

*Manitoba Bridge & Iron Works, Ltd., Winnipeg.

BROOMS

Simms, T. S., & Co., Limited, St. John, N.B.

Stevens-Hepner Co., Limited, Port Elgin, Ont.

BRONZE, SHEETS, RODS, PLATES

*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

BRUSHES

Simms, T. S., & Co., Limited, St. John, N.B.

Stevens-Hepner Co., Limited, Port Elgin, Ont.

BRUSHES, carbon

Canadian National Carbon Co., Ltd., Toronto.

BUCKET TANKS

*Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.

*The Bennett & Wright Co., Ltd., Toronto, Ont.

BUCKLES, shoe and coat

Parmenter & Bulloch Co., Limited, Gananoque, Ont.

BUILDING BLOCKS, vitrified, salt glazed

Standard Clay Products, Ltd., St. Johns, Que.

BUILDING FELT and PAPER

*Eureka Mineral Wool & Asbestos Co., Toronto.

*The Barrett Co., Ltd., Toronto and Montreal.

BURLAPS

The Canadian Bag Co., Limited, Montreal, Que.

*Scythes & Co., Ltd., Toronto.

BURLAPS, decorative

Dominion Oil Cloth Co., Limited, Montreal, Que.

CABLE ACCESSORIES

*Crouse-Hinds Co., Ltd., Toronto.

CABLES, electric light, power, telephone and telegraph

*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

CABLES, transmission and telephones

*Eugene F. Phillips Electrical Works, Ltd., Montreal, Que.

CABLES, Transmission and Cable

*Northern Electric Co., Limited, Montreal, Que.

CABLES, wire

The Dominion Wire Rope Co., Ltd., Montreal, Que.

*The B. Greening Wire Co., Ltd., Hamilton, Ont.

CALENDARS, ADVERTISING NOVELTIES, etc.

Lawson & Jones, Limited, London, Ont.

CAMERAS

Canadian Kodak Co., Limited, Toronto.

CAMPERS' OUTFITTERS

Slingsby Mfg. Co., Ltd., Brantford, Ont.

CANADA SILVER

*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

CANOEES

Peterboro Canoe Co., Ltd., Peterboro, Ont.

*Canadian Canoe Co., Ltd., Peterborough.

CANS, baking powder, etc.

American Can Co., Montreal and Hamilton.

A. R. Whittall Can. Co., Ltd., Montreal.

CANS, fruit

American Can Co., Montreal and Hamilton.

A. R. Whittall Can. Co., Ltd., Montreal.

CANS, iron, lead and putty

A. R. Whittall Can. Co., Ltd., Montreal.

CANS, ROVING, ETC., fibre

*Beveridge Paper Co., Limited, Montreal.

CANS, tin

A. R. Whittall Can. Co., Ltd., Montreal.

American Can Co., Montreal and Hamilton.

CANVAS

*Scythes & Co., Ltd., Toronto.

CAPS, cloth

John W. Peck & Co., Ltd., Montreal, Que.

CARBIDE

*Canada Carbide Co., Ltd., Montreal, Que.

*Union Carbide Co. of Canada, Ltd. Works, Welland, Ont. Head Office Toronto.

CARBONS, Electric
Canadian National Carbon Co., Ltd., Toronto.

CARBONS (headlight)

*Crouse-Hinds Co., Ltd., Toronto.

CARBONIC ACID GAS

Canadian Carbonate Co., Montreal.

CARD RECORD SYSTEMS

*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

CARPETS AND RUGS

Toronto Carpet Mfg. Co., Limited, Toronto.

CARPETS AND RUGS, Axminster and ingrain

Toronto Carpet Mfg. Co., Limited, Toronto.

CARPETS AND RUGS, Brussels and Wilton

Toronto Carpet Mfg. Co., Limited, Toronto.

CARPET YARNS, worsted and wool

Toronto Carpet Mfg. Co., Limited, Toronto.

CARRIAGES, baby, etc.

Canada Furniture Manufacturers, Ltd., Woodstock, Ont.

CARRIERS

*Richards-Wilcox Canadian Co., Limited, London, Ont.

CARRIERS, box and barrel

*Canadian Mathews Gravity Carrier Co., Limited, Toronto.

CARRIERS, brick

*Canadian Mathews Gravity Carrier Co., Limited, Toronto.

*Richards-Wilcox Canadian Co., Ltd., London, Ont.

CARS

*Canadian Car & Foundry Co., Ltd., Montreal, Que.

*National Steel Car Co., Limited, Hamilton, Ont.

CARS, industrial

Hamman Steel Car and Engineering Works, Hamilton.

CARTONS, Lithographed

Harris Lithographing Co., Toronto.

CASTINGS

*Tallman Brass & Metal Co., Hamilton, Ont.

CASTINGS, aluminum

*Booth-Coulter Copper & Brass Co., Limited, Toronto.

*Crouse-Hinds Co., Ltd., Toronto.

*United Brass & Lead, Ltd., Toronto

*Tallman Brass & Metal Co., Hamilton, Ont.

CASTINGS, brass

*Booth-Coulter Copper & Brass Co., Limited, Toronto.

*Crouse-Hinds Co., Ltd., Toronto.

*Tallman Brass & Metal Co., Hamilton, Ont.

*United Brass & Lead, Ltd., Toronto

CASTINGS, brass and bronze

*Tallman Brass & Metal Co., Hamilton, Ont.

*United Brass & Lead, Ltd., Toronto

CASTINGS, grey iron

*Canadian Rumely Co., Limited, Toronto, Ont.

*Crouse-Hinds Co., Ltd., Toronto.

*Dodge Mfg. Co., Toronto.

*Canadian Car & Foundry Co., Ltd., Montreal, Que.

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.

John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

CASTINGS, malleable iron

*Crouse-Hinds Co., Ltd., Toronto.

*Galt Malleable Iron Co., Ltd., Galt, Ont.

CASTINGS, steel

*Canadian Steel Foundries, Ltd., Montreal, Que.

*Dominion Steel Foundry Co., Ltd., Hamilton, Ont.

*Hull Iron and Steel Foundry, Ltd., Hull, P.Q.

*Wm. Kennedy & Sons, Ltd., Owen Sound.

CATALOGUE MAKERS

Grip, Ltd., Toronto.

CAUSTIC SODA

Canadian Salt Co., Ltd., Windsor.

CELLBOARD

Adams Cellboard Co., Toronto.

CEMENT GUNS

Steel and Radiation, Ltd., Toronto.

CEMENT, HIGH TEMPERATURE

*Beveridge Paper Co., Ltd., Montreal.

CHAINS, for elevators, conveyors and drives

*Canadian Link-Belt Co., Toronto.

CHAIRS

*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

CHAIRS, assembly hall

Stratford Mfg. Co., Ltd., Stratford, Ont.

CHAIRS, folding

Stratford Mfg. Co., Ltd., Stratford, Ont.

CHAIRS, rattan and upholstered

Imperial Rattan Co., Ltd., Stratford, Ont.

CHAIR SEATS, fibre

*Beveridge Paper Co., Limited, Montreal.

CHECKS, swing checks, etc

*Mueller Mfg. Co., Ltd., Sarnia.

CHEMICALS

*The Grasselli Chemical Co., Ltd., Toronto.

*The Nichols Chemical Co., Ltd., Montreal, Que.

CHEMISTS, INDUSTRIAL

*Milton Hersey Co., Montreal.

CHICLETS AND CHEWING GUM

Canadian Chewing Gum Co., Ltd., Toronto.

CIGARETTES AND TOBACCO

Philip Morris & Co., Limited, Montreal, Que.

CIRCULAR CUTTERS, solid steel

*Galt Knife Co., Ltd.

The Peter Hay Knife Co., Limited, Galt, Ont.

CIRCULAR SAWS

*E. C. Atkins & Co., Inc., Hamilton, Ont.

CLAM SHELL BUCKETS

*M. Beatty & Sons, Ltd., Welland, Ont.

CLOCKS, TIME

*International Business Machines, Limited, Toronto.

CLOCKS, WATCHMEN'S

*The Bennett & Wright Co., Ltd., Toronto, Ont.

CLOSET SEATS

*Goderich Organ Co., Goderich, Ont.

CLOTHING

John W. Peck & Co., Ltd., Montreal, Que.

CLOTHING, leather and sheepskin lined coats

*A. R. Clarke & Co., Ltd., Toronto.

CLOTHING, Mackinaw

The Carss Mackinaw Clothing Co., Ltd., Orillia, Ont.

CLOTHES LINES, cotton

Hamilton Cotton Co., Hamilton, Ont.

CLUTCHES

*Dodge Mfg. Co., Ltd., Toronto.

CLUTCHES, conveyors

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

COAL

*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.

Standard Fuel Co., Toronto.

COAL CUTTERS

*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

COBALT OXIDE

The Coniagas Reduction Co., Ltd., St. Catharines, Ont.

COFFEE

S. H. Ewing & Sons, Montreal, Que.

COLD DRAWN SHAPES, flats, squares and hexagons

*The Canadian Drawn Steel Co., Ltd., Hamilton, Ont.

*Union Drawn Steel Co., Limited, Hamilton, Ont.

COLD STORAGE DOORS

John Hillock & Co., Ltd., Toronto.

COLLAR BUTTONS

The Arlington Co. of Canada, Ltd., Toronto.

COLLARS

The Standard Shirt Co., Limited, Montreal, Que.

COLLARS, coated linen

COLORES

Brandram-Henderson, Limited,
Montreal, Que.

A. Ramsay & Son Co., Montreal,
Que.

COMBS, fine dressing and name
The Arlington Co. of Canada, Ltd.,
Toronto.

COMMERCIAL STATIONERY

*Brown Bros., Ltd., Toronto.

CONCRETE COATINGS, PAINTS,

ETC.

*Beveridge Paper Co., Ltd., Mont-
real.

*Trussed Concrete Steel Co. of
Canada, Limited, Walkerville, Ont.
The Imperial Varnish & Color Co.,
Limited, Toronto.

CONDUITS FOR INTERIOR

WIRING

*Conduits Company, Ltd., Toronto.

CONDULET BOX FITTINGS

*Crouse-Hinds Co., Ltd., Toronto.

CONDULETS (Marine)

*Crouse-Hinds Co., Ltd., Toronto.

CONFECTIONERY

Ganong Bros., Ltd., St. Stephens,
N.B.

Moirs, Limited, Halifax, N.S.

The Montreal Biscuit Co., Montreal.

CONTAINER BOARD—strong con-

tainer

Bathurst Lumber Co., Ltd., Bath-
urst, N.B.

CONTRACTOR'S PLANT

*M. Beatty & Sons, Ltd., Welland.

*Canadian Allis-Chalmers, Limited,
Toronto.

CONVEYORS

*Canadian Link-Belt Co., Toronto.

*Canadian Mathews Gravity Carrier
Co., Toronto.

*Dodge Mfg. Co., Ltd., Toronto.

COPPER

*Eugene F. Phillips, Electrical
Works, Limited, Montreal.

*Booth-Coulter Copper & Brass Co.,
Limited, Toronto.

COPPER, SHEETS, PLATES, BARS,

RODS

*Brown's Copper and Brass Rolling
Mills, Ltd., New Toronto.

COPPER SHEETS AND PLATES

*Booth-Coulter Copper & Brass Co.,
Limited, Toronto.

*Tallman Brass & Metal Co., Ham-
ilton, Ont.

COPPERSMITHS

*Booth-Coulter Copper & Brass Co.,
Limited, Toronto.

COPPER TUBING, seamless

Canadian Seamless Wire Co., Ltd.,
Toronto.

*Booth-Coulter Copper & Brass Co.,
Limited, Toronto.

COPPER WIRE

Canadian Seamless Wire Co., Ltd.,
Toronto.

*Standard Underground Cable Co.
of Canada, Ltd., Hamilton, Ont.

CORKS

S. H. Ewing & Sons, Montreal, Que.

CORK CARPET

Dominion Oil Cloth Co., Ltd., Mont-
real, Que.

CORRUGATED PAPER BOXES

Adams Cellboard Co., Toronto.

Corrugated Paper Box Co., Ltd.,
Toronto.

*Hinde & Dauch Paper Co., To-
ronto.

*The Thompson & Norris Co. of
Canada, Ltd., Niagara Falls, Ont.

CORUNDUM, artificial

*D. A. Brebner, Ltd., Toronto.

CORSETS

Dominion Corset Co., Quebec, Que.

COTTONS

*Dominion Textile Co., Limited,
Montreal, Que.

*Montreal Cottons, Ltd., Valley-
field, P.Q.

COTTONADES

Hamilton Cotton Co., Hamilton, Ont.

COUPLERS

*Canadian Steel Foundries, Ltd.,
Welland, Ont.

COUPLINGS

*Canadian Bond Hanger & Coup-
ling Co., Alexandria, Ont.

*Dodge Mfg. Co., Ltd., Toronto.

CRANES

*Northern Crane Works, Walk-
erville, Ont.

CRANKSHAFTS

Canada Forge Co., Ltd., Welland,
Ont.

CREAM CHEESE, Ingersoll

The Ingersoll Packing Co., Limited,
Ingersoll, Ont.

CREAM SEPARATORS AND MILK

CLARIFIERS

De Laval Dairy Supply Co., Peter-
boro, Ont.

The Renfrew Machinery Co., Ltd.,
Renfrew, Ont.

CREAMERY AND CHEESE FAC-

TORY MACHINERY AND SUP-

PLIES

De Laval Dairy Supply Co., Ltd.,
Peterboro, Ont.

CREOSOTED MATERIALS

*The Barrett Co., Ltd., Toronto and
Montreal.

CRUSHED STONE

The Hagersville Contracting Co.,
Limited, Hagersville, Ont.

CRUSHING ROLLS

*Jenckes Machine Co., Sherbrooke,
Que.

CUPOLAS

*Sheldons, Ltd., Galt, Ont.

*Northern Crane Works, Limited,
Walkerville, Ont.

CUPS, presentation

Standard Silver Co., Toronto.

CUPS, grease and oil

*The Canadian Winkley Co., Ltd.,
Windsor, Ont.

CURLED HAIR

*Delany and Pettit, Ltd., Toronto.

CURTAINS, chenille

Hamilton Cotton Co., Hamilton,
Ont.

CUTLERY

Standard Silver Co., Toronto.

CUTTERS, (Machine)

*Pratt & Whitney Co., Dundas.

DECALCOMANIA TRANSFERS

Decalcomania Co., Ltd., Toronto.

DECK PLUGS (electric marine)

*Crouse-Hinds Co., Ltd., Toronto.

DENIMS

Hamilton Cotton Co., Hamilton.

DERAILS

*Canadian Hart Wheels, Limited,
Hamilton, Ont.

DESIGNERS

Ontario Engraving Co., Hamilton,
Ont.

DESIGNERS and PRINTERS OF

BOOKLETS, ETC.

Grip, Ltd., Toronto.

DESKS

*Office Specialty Mfg. Co., Ltd.,
Newmarket, Ont.

DESSICATED VEGETABLES

Grahams Limited, Belleville.

DINING ROOM SUITES

The George McLagan Furniture
Co., Limited, Stratford, Ont.

DIES

*Butterfield & Co., Rock Island,
P.Q.

*Pratt & Whitney Co., Dundas.

*John Whitfield Co., Toronto.

DISINFECTING APPARATUS

Spramotor Co., London, Ont.

DOOR HANGERS

*Richards Wilcox Canadian Co.,
Ltd., London, Ont.

DREDGES

*M. Beatty & Sons, Limited, Wel-
land, Ont.

DRESSING, belt.

Sadler & Haworth, Montreal, Que.

DRESS AND CLOAK TRIMMINGS

J. Henry Peters Co., 1 Mincing St.,
Toronto.

DRIFT BOLT DRIVERS

*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

DRILL PRESSES

*Canada Machinery Corporation,
Limited, Galt, Ont.

DRILL SHARPENERS

*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

DRILLS

*John Morrow Screw & Nut Co.,
Limited, Ingersoll, Ont.

*Pratt & Whitney Co., Dundas.

DRILLS, core

*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

DRILLS, pneumatic

*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

DRILLS, rock

*Canadian Ingersoll Rand Co.,
Montreal, Que.

DRIFT BOLTS OR SPIKES

London Rolling Mill Co., Limited,
London, Ont.

DROP FORGINGS

*Canadian Billings & Spencer, Ltd.,
Welland, Ont.

DROP HAMMERS

*Canada Machinery Corporation,
Limited, Galt, Ont.

DRUMS, steel, and containers

*Smart-Turner Machine Co., Ltd.,
Hamilton, Ont.

DRY COLORS

P. D. Dods & Co., Ltd., Montreal.

The Imperial Varnish & Color Co.,
Limited, Toronto.

R. C. Jamieson & Co., Ltd., Mon-
treal, Que.

Standard Paint & Varnish Co.,
Ltd., Windsor, Ont.

DUMB WAITERS

Turnbull Elevator Mfg. Co., To-
ronto.

DURABLE WIRE ROPE

The Dominion Wire Rope Co., Ltd.,
Montreal, Que.

DYNAMITE

Canadian Explosives, Limited, Mon-
treal, Que.

DYNAMOS

Consolidated Electric Co., Limited,
Toronto.

*Jones & Moore Electric Co., Ltd.,
Toronto.

*The Canadian Crocker-Wheeler
Co., Limited, St. Catharines, Ont.

DYNAMOS, plating

*Jones & Moore Electric Co., Ltd.,
Toronto.

EIDERDOWN

Galt Knitting Co., Ltd., Galt.

ELECTRIC APPLIANCES

*Canadian Crocker-Wheeler Co.,
Limited, St. Catharines, Ont.

*Canadian Westinghouse Co., Ltd.,
Hamilton, Ont.

ELECTRIC APPLIANCES, fibre, all

purposes

*Beveridge Paper Co., Limited,
Montreal.

ELECTRICAL COMPOUNDS

Standard Paint Co. of Canada, Ltd.,
Montreal, Que.

ELECTRIC COOKING APPLI-

ANCES

*Canadian General Electric Com-
pany, Ltd., Toronto.

ELECTRIC LAMPS

Packard Electric Co., Limited,
Toronto.

ELECTRIC PLATE WARE

Roden Bros., Ltd., Toronto.

ELECTRIC BRANDING TOOLS

*The Clemens Electrical Corpora-
tion of Canada, Ltd., Hamilton, Ont.

ELECTRIC RAILWAY EQUIPMENT

*Crouse-Hinds Co., Ltd., Toronto.

ELECTRODES, Carbon

Canadian National Carbon Co.,
Ltd., Toronto.

ELECTROPLATING

*United Brass & Lead, Ltd., Toronto

ELECTRO PLATING

Central Press Agency, Toronto.

ELECTRICAL SUPPLIES

*Canadian General Electric Com-
pany, Ltd., Toronto.

*Canadian Westinghouse Co., Ltd.,
Hamilton, Ont.

*Jones & Moore Electric Co., Ltd.,
Toronto.

*Northern Electric Co., Limited,
Montreal, Que.

ELECTRIC SOLDERING IRON

*The Clemens Electrical Corpora-
tion of Canada, Ltd., Hamilton, Ont.

ELECTRO-SILVER PLATED

WARE

Standard Silver Co., Toronto.

ELEVATING MACHINERY

*Canadian Link-Belt Co., Toronto.

*Canadian Mathews Gravity Carrier
Co., Toronto.

ELEVATORS

*Jenckes Machine Co., Sherbrooke,
Que.

*Mackinnon, Holmes & Co., Ltd.,
Sherbrooke, P.Q.

Turnbull Elevator Manufacturing
Company, Toronto.

*The Watrous Engine Works Co.,
Ltd., Brantford, Ont.

*Northern Crane Works, Limited,
Walkerville, Ont.

ELEVATORS FOR ALL PUR-

POSES

*The Watrous Engine Works Co.,
Limited, Brantford, Ont.

ELEVATOR GATES AND DOORS

Turnbull Elevator Mfg. Co., Ltd.,
Toronto.

ELEVATOR GUARDS

*The Geo. B. Meadows, Toronto

Iron and Brass Goods Works Co.,
Limited, Toronto.

*Canada Wire and Iron Works,
Hamilton, Ont.

ELEVATORS, hydraulic and electric

John McDougall Caledonian Iron
Works Co., Ltd., Montreal, Que.

EMERY DRESSERS and STANDS

*Canadian Hart Wheels, Limited,
Hamilton, Ont.

EMERY GRINDERS

*Canadian Hart Wheels, Limited,
Hamilton, Ont.

EMERY WHEELS

*Canadian Hart Wheels, Limited,
Hamilton, Ont.

EMERY WHEEL GUARDS

*Canadian Hart Wheels, Limited,
Hamilton, Ont.

ENAMELS

R. C. Jamieson & Co., Limited,
Montreal, Que.

The Imperial Varnish & Color Co.,
Ltd., Toronto.

ENAMEL MANUFACTURERS AND

DECORATORS

Standard Paint & Varnish Co.,
Ltd., Windsor, Ont.

ENAMEL AND TIN WARE

McClary Mfg. Co., London, Ont.

ENGINES

*E. Leonard & Sons, London, Ont.

*Goldie & McCulloch Co., Limited,
Galt, Ont.

J. & R. Weir, Montreal, Que.

*Jenck

EXCELSIOR

*Delany & Pettit, Ltd., Toronto.

EXCELSIOR PADS

*Delany & Pettit, Ltd., Toronto.
Parmenter & Bulloch Co., Limited,
Gananoque, Ont.

EXPERTS IN PATENT CAUSES

Ridout & Maybee, Toronto.

EXPLOSIVES, high

Canadian Explosives Ltd., Montreal.

FACE PLATE JAWS

Ker & Goodwin, Brantford, Ont.

FACTORY SUPPLIES, cheese and

creamery
De Laval Dairy Supply Co., Ltd.,
Montreal, Que.

FANS

*Sheldons, Limited, Galt, Ont.
*The Canadian Blower & Forge Co.,
Limited, Kitchener, Ont.

FASTENERS, belt

*Sadler & Haworth, Montreal, Que.

FELTS, pulp and paper makers

Ayers Limited, Lachute Mills, P.Q.

*Beveridge Paper Co., Limited
Montreal.

FENCES AND GATES

*Dennis Wire & Iron Works Co.,
London, Ont.

*Canada Wire and Iron Works
Hamilton, Ont.

FENCING AND GATES, woven

wire
*Canada Wire and Iron Goods Co.,
Hamilton, Ont.

FENCING, wire

C. H. Johnson & Sons, Limited,
Montreal, Que.

FIBRE PAIS

*The E. B. Eddy Co., Ltd., Hull,
Que.

FIBRE, VULCANIZED, hard and

flexible
*Beveridge Paper Co., Limited,
Montreal.

FILES

Henry Disston & Sons, Limited,
Toronto.

*The Nicholson File Co., Port Hope.

FILING CABINETS

*Office Specialty Co., Newmarket.

FILING EQUIPMENT, wood & steel

*Office Specialty Mfg. Co., Ltd.,
Newmarket, Ont.

FILING SYSTEMS

*Office Specialty Mfg. Co., Ltd.,
Newmarket, Ont.

FILTER PAPERS

*Beveridge Paper Co., Limited
Montreal.

FIRE ALARMS

*Northern Electric Co., Limited
Montreal, Que.

FIRE APPARATUS

*R. S. Bickle Co., Woodstock, Ont.

FIRE BRICK

Dominion Fire Brick and Clay Pro-
ducts, Ltd., Moose Jaw

FIRE BRICK AND CEMENT

*Beveridge Paper Co., Ltd., Mont-
real.

FIRE BRICK AND CLAY

The Dominion Fire Brick and Clay
Products, Ltd., Moose Jaw, Sask.

FIRE BRICK, JOINTLESS

*Beveridge Paper Co., Ltd., Mont-
real.

FIRECLAY

*Jas. W. Foley & Co., St. John, N.B.

FIRE DOOR HARDWARE

*Richards Wilcox Canadian Co.
Limited, London, Ont.

FIRE DOORS

*A. B. Ormsby Co., Ltd., Toronto.

*The Pedlar People Limited,
Oshawa.

FIRE ENGINES

*R. S. Bickle Co., Woodstock, Ont.

Waterous Engine Works Co., Lim-
ited, Brantford, Ont.

FIRE ESCAPES

*Canada Wire and Iron Goods Co.,
Hamilton, Ont.

*Dennis Wire & Iron Works Co.,
London, Ont.

*McGregor & McIntyre, Ltd., To-
ronto.

FIRE EXTINGUISHERS

*A. B. Ormsby Co., Ltd., Toronto.

*Booth-Coulter Copper and Brass
Co., Limited, Montreal, Que.

*The Bennett & Wright Co., Ltd.,
Toronto, Ont.

FIRE FIGHTING APPARATUS

*The Waterous Engine Works Co.,
Limited, Brantford, Ont.

FIRE HOSE

*Canadian Consolidated Rubber
Co., of Canada, Limited, Montreal,
Que.

Dunlop Tire & Rubber Goods Co.,
Ltd., Toronto.

*Gutta Percha and Rubber, Ltd.,
Toronto.

FIRE PREVENTION MATERIAL

*Chicago Bridge & Iron Works,
Bridgeburg, Ont.

*Eureka Mineral Wool & Asbestos
Co., Toronto.

*The Bennett & Wright Co., Ltd.,
Toronto, Ont.

FIRE PROOF WINDOWS AND

DOORS

*A. B. Ormsby Co., Ltd., Toronto.

*Pedlar People, Ltd., Oshawa, Ont.

*Trussed Concrete Steel Co. of
Canada, Limited, Walkerville, Ont.

FIRE SPRINKLER SYSTEMS

*Chicago Bridge & Iron Works,
Bridgeburg, Ont.

*The Bennett & Wright Co., Ltd.,
Toronto, Ont.

*Purdy Mansell Co., Toronto.

*H. G. Vogel Co., Montreal, Que.

FIRE AND WATER DEPARTMENT

SUPPLIES

*Chicago Bridge & Iron Works,
Bridgeburg, Ont.

The Garth Co., Montreal, Que.

FISH, Atlantic Sea-Foods

Maritime Fish Corporation Ltd.,
Montreal, Que.

FITTINGS FOR SOIL PIPE

Anthes Foundry, Ltd., Toronto.

FITTINGS, steam

Warden King, Ltd., Montreal, Que.

FIXTURES

*Crouse-Hinds Co., Ltd., Toronto.

FLAGS

*Scythes & Co., Limited, Toronto.

FLEXIBLE COUPLINGS

*Canadian Bond Hanger & Coup-
ling Co., Alexandria, Ont.

FLOODLIGHTS (electric)

*Crouse-Hinds Co., Ltd., Toronto.

FLOORING, hardwood

Seaman Kent Co., Ltd., Meaford,
Ont.

FLOUR MILL MACHINERY

*Canadian Allis-Chalmers, Limited,
Toronto.

FLUE LINERS

Standard Clay Products, Ltd., St.
Johns, Que.

FORGES

*Canadian Blower & Forge Co., Ltd.,
Kitchener, Ont.

*Sheldons, Limited, Galt, Ont.

FORGINGS

Canada Forge Co., Ltd., Welland.

*The Steel Co. of Canada, Limited,
Hamilton, Ont.

FORGINGS, drop

*Canadian Billings & Spencer, Ltd.,
Welland, Ont.

*Dominion Forge and Stamping
Co., Walkerville, Ont.

FOUNDRY EQUIPMENT

*Northern Crane Works, Limited,
Walkerville, Ont.

FOUNTAIN FRUITS and Juices

J. J. McLaughlin, Ltd., Toronto.

FOUNTAINS, drinking

*Mueller Mfg. Co., Ltd., Sarnia.

FRICTION CLUTCH PULLEYS

*Dodge Mfg. Co., Ltd., Toronto.

FROGS AND CROSSINGS,

manganese
Canadian Ramapo Iron Works, Ltd.,
Niagara Falls, Ont.

FUEL

Standard Fuel Co., Toronto.

FUR GARMENTS, men's and

women's
Holt, Renfrew, Ltd., Quebec.

FUR GOODS

John W. Peak & Co., Limited,
Montreal, Que.

FUR TRIMMINGS, ornaments and

buttons
J. Henry Peters Co., 1 Mincing St.,
Toronto.

FURNACES

McClary Mfg. Co., London, Ont.

The Jas. Smart Mfg. Co., Limited,
Brockville, Ont.

FURNACES, oil burning

*Mechanical Engineering Works,
Montreal, Que.

FURNITURE, hall

The George McLagan Furniture Co.,
Limited, Stratford, Ont.

FURNITURE, office

The Canadian Office and School
Furniture Co., Ltd., Preston, Ont.

FURNITURE, reed and rattan

Imperial Rattan Co., Ltd., Strat-
ford, Ont.

FUSE BOXES

*Crouse-Hinds Co., Ltd., Toronto.

FUSE PLUGS AND FUSES, refill-

able

*The Clemens Electrical Corpora-
tion of Canada, Ltd., Hamilton, Ont.

FUSES

*Economy Fuse and Mfg. Co., Mon-
treal.

GALVANIZED IRON

*A. C. Leslie & Co., Montreal.

GALVANIZED SHEETS

*Dominion Sheet Metal Co., Ham-
ilton, Ont.

GALVANIZERS

Acme Stamping & Tool Works, Ltd.,
Hamilton, Ont.

*Ontario Wind Engine and Pump
Co., Limited, Toronto.

*The Pedlar People, Ltd., Oshawa.

GASOLINE ENGINES

*Ontario Wind & Pump Co., Ltd.,
Toronto.

De Laval Dairy Supply Co., Ltd.,
Peterboro, Ont.

GASOLINE FIRE ENGINES

*The Waterous Engine Works Co.,
Ltd., Brantford, Ont.

GASOLINE STORAGE SYSTEMS,

special underground

S. F. Bowser & Co., Toronto.

*Steel Trough and Machine Co., Ltd.,
Tweed, Ont.

GASOLINE

*The Imperial Oil Co., Limited,
Toronto.

GAUGES

*Brown Engineering Corporation,
Toronto.

*John Whitfield Co., Toronto.

GEARS, cut

*Brown Engineering Corporation,
Toronto.

*Hamilton Gear & Machine, Toronto.

*Winnipeg Gear & Engineering
Co., Ltd., Winnipeg.

GEARS, noiseless fibre, also rein-

forced

*Beveridge Paper Co., Limited,
Montreal.

GELATINE

Canada Gelatine Co., Ltd., Brant-
ford.

GENERATORS

*Canadian Crocker-Wheeler Co.,
Ltd., St. Catharines, Ont.

*Canadian Westinghouse Co., Ltd.,
Hamilton, Ont.

GENERATORS, electric

*Canadian General Electric Com-
pany, Ltd., Toronto.

GINS

The Melchers Gin & Spirits Dis-
tillery Co., Ltd., Montreal, Que.

GLASSWARE

Dominion Glass Co., Limited, Mon-
treal, Que.

GLASSWARE, cut

Roden Bros., Ltd., Toronto.

GLASS FOR BUILDINGS

Toronto Plate Glass Importing Co.,
Limited, Toronto.

GLASS BENDERS

Toronto Plate Glass Importing Co.,
Limited, Toronto.

GLASS, mirror

Toronto Plate Glass Importing Co.,
Limited, Toronto.

GLOVES AND MITTS

*A. R. Clarke & Co., Ltd., Toronto.

Craig, Cowan Co., Ltd., Toronto.

GLUE

Canada Glue Co., Ltd., Brantford.

*Delany and Pettit, Ltd., Toronto.

GOLD-FILLED WIRE AND

PLATE

Canadian Seamless Wire Co., To-
ronto.

GOLD AND SILVER REFINERS

Canadian Seamless Wire Co., To-
ronto.

GRAIN CRUSHERS (Rapid Easy)

J. Fleury's Sons, Aurora, Ont.

GRAPE JUICE

J. J. McLaughlin, Ltd., Toronto.

The Welch Co., Ltd., St. Catharines.

GRATES

*The Goldie & McCulloch Co., Ltd.,
Galt, Ont.

GRAVITY CARRIERS

*Canadian Mathews Gravity Carrier
Co., Toronto.

GRILLES, metal

*Canada Wire & Iron Goods Co.,
Hamilton, Ont.

*Dennis Wire & Iron Works Co.,
London, Ont.

GRINDER, bench

*Canadian Bond Hanger & Coup-
ling Co., Alexandria, Ont.

GRINDERS, portable

*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

GRINDERS, Pedestal and Bench

*Canadian Hart Wheels, Limited,
Hamilton, Ont.

GRINDING and Polishing Machinery

*Canadian Hart Wheels, Limited,
Hamilton, Ont.

GRINDING WHEELS

*Canadian Hart Wheels, Limited,
Hamilton, Ont.

*The Dominion Abrasive Wheel
Co., Limited, New Toronto.

GRINDSTONES

*Richards-Wilcox Canadian Co.,
Limited, London, Ont.

GUARDS (Condulet)

*Crouse-Hinds Co., Ltd., Toronto.

GUNN SECTIONAL BOOKCASES

The Geo. McLagan Furniture Co.,
Limited, Stratford, Ont.

GUY ANCHORS

B. J. Coghlin Co., Ltd., Montreal.

GUY RODS

*Crouse-Hinds Co., Ltd., Toronto.

GYPSUM, crushed

*Albert Mfg. Co., Hillsborough, N.B.

GYPSUM PRODUCTS

*Manitoba Gypsum Co., Ltd., Win-
nipeg, Man.

De Laval Dairy Supply Co., Ltd.,
Peterboro, Ont.

HACK SAW BLADES and FRAMES

*E. C. Atkins & Co., Inc., Hamil-
ton, Ont.

HACK SAW MACHINES

*E. C. Atkins & Co., Inc., Hamil-
ton, Ont.

HALL FURNITURE

The Geo. McLagan Furniture Co.,
Limited, Stratford, Ont.

HAMS

F. W. Fearman Co., Ltd., Hami-
ton, Ont.

HANDLES (Axe, pick, sledge ham-

mers, etc.)

The Lach

HEATERS

*Waterous Engine Works Co., Ltd., Brantford, Ont.

HEATERS, feed water

*Darling Bros., Ltd., Montreal.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

HEATING APPLIANCES

*C. A. Dunham Co., Ltd., Toronto.
*Darling Bros., Ltd., Montreal.
*Sheldons, Limited, Galt, Ont.
*The Canadian Blower & Forge Co., Limited, Kitchener, Ont.

HEATING SYSTEMS

*C. A. Dunham Co., Ltd., Toronto.

HEMLOCK, union and oak sole
Breithaupt Leather Co., Ltd., Kitchener, Ont.

HESSIANS

The Canadian Bag Co., Limited, Montreal, Que.
*Scythes & Co., Limited, Toronto.

HINGES

*The Steel Co. of Canada, Limited, Hamilton, Ont.

HOISTS

*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOISTS, electric and pneumatic

*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
*M. Beatty & Sons, Ltd., Welland, Ont.

*Northern Crane Works, Limited, Walkerville, Ont.

HOISTING MACHINERY

*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
*M. Beatty & Sons, Ltd., Welland, Ont.

*Northern Crane Works, Limited, Walkerville, Ont.

HOSE, fire

*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd., Toronto.

HOSE, half, Imperial

Kingston Hosiery Co., Ltd., Kingston, Ont.

HOSE, rubber

*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.

*Gutta Percha & Rubber, Limited, Toronto.

HYDRAULIC PRESSES

*Bawden Machine Co., Limited, Toronto.

*William R. Perrin, Ltd., Toronto

HYDRO ELECTRIC PLANTS

*Canadian Allis-Chalmers, Limited, Toronto.

ICE CREEPERS

Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ICE-MAKING MACHINERY

The Linde Canadian Refrigeration Co., Limited, Montreal, Que.

INCUBATORS & BROODERS

Lee Mfg. Co., Ltd., Pembroke, Ont.

INGOT METALS

*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

INJECTORS, automatic and autopoitive

Penberthy Injector Co., Limited, Windsor, Ont.

INSERTED TOOTH SAWS

*E. C. Atkins & Co., Inc., Hamilton, Ont.

INSULATING COMPOUNDS

The Imperial Varnish & Color Co., Ltd., Toronto.

INSULATING PAPER AND FIBRE

*Beveridge Paper Co., Limited, Montreal.

INSULATORS

*Crouse-Hinds Co., Ltd., Toronto.

INTERLOCKING RUBBER TILING

*Gutta Percha & Rubber Mfg. Co. of Toronto, Limited, Toronto.

INVERTS

Standard Clay Products, Ltd., St. Johns, Que.

IRON

*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.

IRON, refined bar

Starr Mfg. Co., Ltd., Dartmouth, N.S.

IRON AND STEEL BARS

*Burlington Steel Co., Ltd., Hamilton, Ont.

*The Steel Co. of Canada, Limited, Hamilton, Ont.

IRON STAIRWAYS

*Canada Wire & Iron Goods Co., Hamilton, Ont.

*Dennis Wire & Iron Works Co., London, Ont.

*McGregor & McIntyre, Ltd., Toronto.

IRONWORK, architectural

*Canadian Allis-Chalmers, Limited, Toronto.

*Canada Wire & Iron Goods Co., Hamilton, Ont.

IRONWORK, ornamental

*Canada Wire & Iron Goods Co., Hamilton, Ont.

IRON, LEAD AND PUTTY

A. R. Whittall, Montreal, Que.

JACKS

Globe Engineering Co., Ltd., Hamilton.

JAM, canned goods, etc.

E. D. Smith & Son, Limited.

JAPANS, enamels, etc.

A. Muirhead Co., Ltd., Toronto.

The Imperial Varnish & Color Co., Ltd., Toronto.

JIGS AND TOOLS

*Brown Engineering Corporation, Toronto.

JOINTERS

*Canada Machinery Corporation, Limited, Galt, Ont.

*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

JELLY POWDER

S. H. Ewing & Sons, Montreal, Que.

JEWELRY, enamelled souvenir

Caron Bros., Montreal, Que.

JEWELRY, gold-filled

Caron Bros., Montreal, Que.

JOIST HANGERS

*Richards-Wilcox Canadian Co., Limited, London, Ont.

JUNCTION BOXES, cable

*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

KELSEY WARM AIR GENERATOR

The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

*Sheldons, Limited, Galt, Ont.

KINDLING

Standard Fuel Co., Toronto.

KNIFE GRINDERS

*Canada Machinery Corporation, Limited, Galt, Ont.

*W. H. Banfield & Sons, Toronto.

KNITTED GOODS

*Penman's, Limited, Paris, Ont.

KNIVES

*Galt Knife Co., Ltd.

Henry Disston and Sons, Toronto

The Peter Hay Knife Co., Limited, Galt, Ont.

Simonds Canada Saw Co., Limited, Montreal, Que.

KNIVES, pulp and paper

Henry Disston and Sons, Toronto.

The Peter Hay Knife Co., Limited, Galt, Ont.

KODAKS AND PHOTOGRAPHIC SUPPLIES

Canadian Kodak Co., Ltd., Toronto

LABELS

Lawson & Jones, Ltd., London, Ont.

LABELS, lithographed

Harris Lithographing Co., Toronto.

LACE LEATHER

F. O. McCordick, St. Catharines, Ont.

*Sadler & Haworth, Montreal, Que.

*The D. K. McLaren Belting Co., Limited, Montreal, Que.

*The J. C. McLaren Belting Co., Limited, Montreal, Que.

LADDERS

Stratford Mfg. Co., Ltd., Stratford, Ont.

LADDERS, step.

*Otterville Mfg. Co., Ltd., Otterville, Ont.

LADLES, foundry

*Northern Crane Works, Limited, Walkerville, Ont.

LAMP GLOBES

*Crouse-Hinds Co., Ltd., Toronto.

LARD

F. W. Fearman Co., Ltd., Hamilton, Ont.

LATH

The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

LATHE CHUCKS

Ker & Goodwin, Brantford, Ont.

LATHE-DOGS

Canadian Billings & Spencer, Ltd., Welland, Ont.

LATHES

*Canada Machinery Corporation, Limited, Galt, Ont.

LAUNCHES

Peterboro Canoe Co., Ltd., Peterboro, Ont.

LAWN MOWERS

Taylor-Forbes Co., Limited, Guelph, Ont.

LAWN SWINGS

Stratford Mfg. Co., Ltd., Stratford, Ont.

LAVATORIES, enameled

Amherst Foundry Co., Limited, Amherst, N.S.

LAUNDRY SINKS

Amherst Foundry Co., Limited, Amherst, N.S.

LEAD GRINDERS

Benjamin Moore & Co., Limited, Toronto.

LEAD SHEET

Toronto Plate Glass Importing Co., Limited, Toronto.

LEAD PIPE

*The Steel Co. of Canada, Limited, Hamilton, Ont.

Toronto Plate Glass Importing Co., Limited, Toronto.

*The Canada Metal Co., Toronto.

*United Brass & Lead, Ltd., Toronto

LEATHER

The Robson Leather Co., Limited, Oshawa, Ont.

LEATHER, bookbinders'

Clarke & Clarke, Ltd., Toronto.

LEATHER, fancy

Clarke & Clarke, Ltd., Toronto.

LEATHER GOODS

Lamontagne, Ltd., Montreal, Que.

LEATHER, hemlock, union and oak sole

The Breithaupt Leather Co., Ltd., Kitchener, Ont.

LEATHER, patent colt and side leather

*A. R. Clarke & Co., Ltd., Toronto.

LEATHER, sheepskin, etc.

Clarke & Clarke, Ltd., Toronto.

LEATHER, upholstery

Clarke & Clarke, Ltd., Toronto.

LEATHER, upper

A. Davis & Son, Ltd., Kingston, Ont.

LIGHTS (marine, side and port)

*Crouse-Hinds Co., Ltd., Toronto.

LINK BELT, Ewart, and sawmill riveted

*Canadian Link-Belt Co., Toronto.

LINK BELTING

*The Dodge Mfg. Co., Ltd., Toronto.

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

LINOLEUM

Dominion Oil Cloth Co., Limited, Montreal, Que.

LITHOGRAPHED BUSINESS STATIONERY

Business Systems, Ltd., Toronto.

LITHOGRAPHED TIN WARE

*MacDonald Mfg. Co., Limited, Toronto.

LITHOGRAPHERS

American Bank Note Company, Ottawa, Ont.

Harris Lithographing Co., Toronto.

LOCKERS

*Canada Wire & Iron Works Co., Hamilton, Ont.

*Dennis Wire & Iron Works Co., London, Ont.

*Geo. B. Meadows, Wire, Iron and Brass Works Co., Toronto.

LOCOMOTIVE BLOCKS

Standard Clay Products, Limited, St. Johns, Que.

LOCOMOTIVES, industrial

*Montreal Locomotive Works, Ltd., Montreal, Que.

LOCOMOTIVE & MARINE BRASS WORKS

The James Morrison Brass Mfg. Co., Limited, Toronto.

*United Brass & Lead, Ltd., Toronto

LOOSE LEAF, BINDERS AND FORMS

Business Systems, Ltd., Toronto.

LOOSE LEAF SYSTEMS

Copeland-Chatterton Co., Limited, Brampton, Ont.

LOOSE LEAF SUPPLIES

The Esdale Press, Ltd., Edmonton.

LUBRICATORS, steam sight feed
Penberthy Injector Co., Limited, Windsor, Ont.

LUGS, for silos and water tanks

*Ontario Wind Engine & Pump Co., Ltd., Toronto.

*Otterville Mfg. Co., Ltd., Otterville, Ont.

LUMBER

*Brown Corporation, La Tuque, Que.

The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

G. & J. Esplen, Montreal, Que.

LUMBER, asbestos

*Eureka Mineral Wool & Asbestos Co., Toronto.

LUMBER, spruce and pine, cedar

railway ties and shingles

Bathurst Lumber Co., Ltd., Bathurst, N.B.

LUMBERING BLANKETS

Slingsby Mfg. Co., Ltd., Brantford, Ont.

LUMBER, red pine and spruce

Gillies Bros., Ltd., Braeside, Ont.

LUMBER, spruce, fir, larch and cedar

Fernie Lumber Co., Ltd., Fernie, B.C.

LUMBER, white pine

Gillies Bros., Ltd., Braeside, Ont.

MACHINE KNIVES

*Galt Knife Co., Ltd.

*E. C. Atkins & Co., Inc., Hamilton, Ont.

MACHINE TOOLS

*Canada Machinery Corporation, Limited, Galt, Ont.

*John Bertram & Sons Co., Ltd., Dundas, Ont.

*United Brass & Lead, Ltd., Toronto

MACHINE WORK, special

*United Brass & Lead, Ltd., Toronto

MACHINE WORK, special and repairs

*Canadian Rumely Co., Limited, Toronto, Ont.

MACHINERY, conveying

*Canadian Link-Belt Co., Toronto.

*Canadian Mathews Gravity Carrier Co., Limited, Toronto.

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

MACHINERY, flour mill

*Canadian Fairbanks-Morse Company, Ltd., Montreal, Que.

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

MACHINERY, grinding

*Canadian Hart Wheels, Limited, Hamilton, Ont.

MACHINERY, hoisting, etc.

*Polson Iron Works, Limited, Toronto.

J. & R. Weir, Montreal, Que.

*M. Beatty & Sons, Ltd., Welland.

*Northern Crane Works, Limited, Walkerville, Ont.

MACHINERY, ice cream

J. J. McLaughlin, Ltd., Toronto.

MACHINERY, iron working

*Canada Machinery Corporation, Limited, Galt, Ont.

*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, pulp mill

*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINERY, punching and shearing.

*Canada Machinery Corporation, Limited, Galt,

MACHINERY, special

Bawden Machine Co., Limited, Toronto.

MACHINERY, transmission

*Canadian Bond Hanger and Coupling Co., Ltd., Alexandria, Ont.
 *Dodge Mfg. Co., Ltd., Toronto.
 *Goldie & McCulloch Co., Limited, Galt, Ont.

MACHINERY, woodworking

*Canada Machinery Corporation, Limited, Galt, Ont.
 *Yates, P. B., Machine Co., Ltd., Hamilton, Ont.
 Preston Woodworking Machinery Co., Ltd., Preston.
 *The Watrous Engine Works Co., Limited, Brantford, Ont.

MACHINE WORK, special and repairs

*Canadian Rumely Co., Ltd., Toronto, Ont.

MACHINE WRENCHES

*Canadian Billings & Spencer, Ltd., Welland, Ont.

MACHINES, painting

Spramotor Co., London, Ont.

MAGNESITE

Canadian Carbonate Co., Limited, Montreal, Que.

MALT

*Hiram Walker & Sons, Limited, Walkerville, Ont.

MAPLE PRODUCTS

*Maples, Limited, Toronto.

MARTINGALE RINGS AND SLIDE LOOPS

The Arlington Co. of Canada, Ltd., Toronto.

MATCHES

*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

MATCHES

*The E. B. Eddy Co., Ltd., Hull.

MECHANICAL STOKERS

*The Jones Underfeed Stoker Co., Ltd., Toronto.

MEDICINES, patented and pharmaceutical

Dr. Ed. Morin & Cie., Ltd., Quebec.

METAL, babbit

*Canada Metal Co., Toronto.

*Tallman Brass and Metal Co., Hamilton, Ont.

Alonso W. Spooner, Limited, Port Hope, Ont.

METAL CEILING

*The Pedlar People Limited, Oshawa.

METAL LATH

*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

*The Pedlar People Limited, Oshawa.

METAL PACKING

*Garlock Packing Company, Hamilton, Ont.

METAL, spinning and stamping

The Booth-Coulter Copper and Brass Co., Limited, Toronto.

METAL SAWS

*E. C. Atkins & Co., Inc., Hamilton, Ont.

METAL SHINGLES

*The Pedlar People Limited, Oshawa.

MILK DEALERS' MACHINERY AND SUPPLIES

De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

MILLEBOARD, asbestos

*Eureka Mineral Wool & Asbestos Co., Toronto.

MILLING CUTTERS

Pratt and Whitney Company of Canada, Dundas, Ont.

MINING MACHINERY

*Canadian Allis-Chalmers, Limited, Toronto.

MITTS AND GLOVES (Indian, tan, red deerskins)

Holt, Renfrew Ltd., Quebec, Que.

A. R. Clarke & Co., Ltd., Toronto

MOCCASINS AND SLIPPERS (Indian tanned leathers)

Holt Renfrew Ltd., Quebec, Que.

MORTISERS

*Canada Machinery Corporation, Limited, Galt, Ont.

*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

MOTOR CARS

*Ford Co. of Canada, Ford, Ont.

MOTORS, electric

*Canadian General Electric Company Ltd., Toronto.

MOTORS, electric (alternating current)

*Canadian Westinghouse Co., Ltd., Hamilton, Ont.

Consolidated Electric Co., Limited, Toronto.

*Jones & Moore Electric Co., Ltd., Toronto.

*Canadian Crocker-Wheeler Co., Ltd., St. Catharines, Ont.

*T. & H. Electric Co., Hamilton.

MOTORS, electric (direct current)

*Canadian Westinghouse Co., Ltd., Hamilton, Ont.

Consolidated Electric Co., Limited, Toronto.

*Jones & Moore Electric Co., Ltd., Toronto.

*T. & H. Electric Co., Hamilton.

MOTORS, electric (repairing)

Consolidated Electric Co., Limited, Toronto.

*T. & H. Electric Co., Hamilton.

MOTORS, pneumatic

*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

MOULDERS

*Canada Machinery Corporation, Limited, Galt, Ont.

*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

NAILS

The Steel Co. of Canada, Limited, Hamilton, Ont.

NAILS, copper

Parmenter and Bullock Co., Ltd., Gananoque, Ont.

NAILS, wire

Parmenter and Bullock Co., Ltd., Gananoque, Ont.

The Graham Nail Works, Toronto.

NAPHTHA

*The Imperial Oil Co., Limited, Toronto.

NICKEL OXIDE

Coniagas Reduction Co., Limited, St. Catharines, Ont.

NUTS

*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.

*The National Acme Mfg. Co., Montreal, Que.

*The Steel Co. of Canada, Limited, Hamilton, Ont.

*United Brass & Lead, Ltd., Toronto

OAKUM, plumbers, Canadian Navy Factory Waste and Metal Co., Montreal, Que.

*Scythes & Co., Ltd., Toronto.

OAT CRUSHERS AND FLAKERS

J. Fleury's Sons, Aurora, Ont.

OFFICE DESKS

*Goderich Organ Co., Goderich, Ont.

OFFICE EQUIPMENT

*Office Specialty Co., Newmarket, Ont.

OFFICE FURNITURE

*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

OILS

Brandram-Henderson, Ltd., Montreal, Que.

A. Ramsay & Son Co., Montreal, Que.

Sherwin-Williams Co. of Canada, Limited, Montreal, Que.

OIL FILTRATION AND CIRCULATING SYSTEMS

S. F. Bowser & Co., Toronto.

OIL STORAGE SYSTEMS, self-measuring

S. F. Bowser & Co., Toronto.

OIL COMPANIES

*Canadian Oil Cos., Toronto.

Commercial Oil Co., Ltd., Hamilton, Ont.

*Imperial Oil Co., Toronto.

OILS (Petroleum products)

*British American Oil Co., Limited, Toronto.

*The Imperial Oil Co., Limited, Toronto.

OTT.S. road

*The Barrett Co., Ltd., Toronto and Montreal.

OILCLOTHS, floor and table

Dominion Oil Cloth Co., Limited, Montreal, Que.

ORGANS

*Goderich Organ Co., Goderich, Ont.

Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.

JORGANS, pipe

Casavant Freres, St. Hyacinthe, Que.

Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.

ORGANS, parlor

*Goderich Organ Co., Goderich, Ont.

ORNAMENTAL IRON WORK

*Canada Wire & Iron Goods Co., Hamilton, Ont.

*Dennis Wire & Iron Works Co., London, Ont.

*The Geo. B. Meadows, Toronto

Iron and Brass Goods Works Co., Limited, Toronto.

*McGregor & McIntyre, Ltd., Toronto.

OVERALLS

Peerless Overall Co., Rock Island, Que.

Walker Pant and Shirt Co., Walkerville and Chatham, Ont.

The Standard Shirt Co., Limited, Montreal, Que.

OVERCOATINGS

Rosamond Woollen Co., Almonte, Ont.

OVERHEAD RUNWAYS

*Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.

*Richards-Wilcox Canadian Co., Limited, London, Ont.

OXY-ACETYLENE WELDING

*L'Air Liquide Society, Montreal.

*The Prest-O-Lite Co., Inc., Toronto.

OXYGEN

*L'Air Liquide Society, Montreal.

PACKERS, parchment papers, discs, shavings

*Beveridge Paper Co., Limited, Montreal.

PACKING BOXES

Barchard & Co., Limited, Toronto.

PACKING, engine

Dunlop Tire & Rubber Goods Co., Ltd., Toronto.

*Garlock Packing Co., Hamilton.

PACKING, rubber

*Canadian Consolidated Rubber Co., Limited, Montreal, Que.

Dunlop Tire & Rubber Goods Co., Ltd., Toronto.

*Gutta Percha & Rubber, Limited, Jenkins Bros., Ltd., Montreal, Que.

PAIS AND TUBS, wooden

The C. Beck Mfg. Co., Limited, Penetanguishene, Ont.

PAINTERS' SUPPLIES

A. Muirhead Co., Ltd., Toronto.

PAINTS

R. C. Jamieson & Co., Limited, Montreal, Que.

PAINTS AND VARNISHES

A. Muirhead Co., Ltd., Toronto.

Benjamin Moore & Co., Limited, Toronto.

Standard Paint & Varnish Co., Ltd., Windsor, Ont.

The Imperial Varnish & Color Co., Limited, Toronto.

The Staneland Co., Ltd., Victoria, B.C.

A. Ramsay & Sons Co., Montreal, Que.

Standard Paint Co. of Canada, Limited, Montreal, Que.

PAINTS, barn and bridge

Standard Paint & Varnish Co., Ltd., Windsor, Ont.

PAINTS, preservative

Standard Paint Co. of Canada, Limited, Montreal, Que.

*The Barrett Co., Ltd., Toronto and Montreal.

PANELBOARDS

*Crouse-Hinds Co., Ltd., Toronto.

PAPER BAGS

*Beveridge Paper Co., Limited, Montreal.

PAPER, book

Barber Paper & Coating Mills, Ltd., Georgetown, Ont.

PAPER BOXES

King Paper Box Co., Ltd., Montreal, Que.

*Rudd Paper Box Co., Limited, Toronto.

PAPER, coated, book and label

*Provincial Paper Mills, Limited, Georgetown, Ont.

PAPER, coated box board

*Provincial Paper Mills, Limited, Georgetown, Ont.

PAPER, coated cover

*Provincial Paper Mills, Limited, Georgetown, Ont.

PAPER, envelope

Provincial Paper Mills Limited, Georgetown, Ont.

The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, enamelled blotting

*Provincial Paper Mills, Limited, Georgetown, Ont.

PAPER, kraft and all wrappings, printings and specialties

*Beveridge Paper Co., Limited, Montreal.

PAPER, label

*Provincial Paper Mills, Limited, Georgetown, Ont.

PAPER, ledger

*Howard Smith Paper Mills, Ltd., Montreal.

*Rolland Paper Co., Limited, Montreal, Que.

The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, news

*The Riordon Pulp and Paper Co., Montreal, Que.

PAPER, super-book

The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, wall

Stauntons, Ltd., Toronto.

PAPER, waxed

Business Systems, Ltd., Toronto.

PAPER, wrapping, printing and specialties

*The Riordon Pulp and Paper Co., Montreal, Que.

PAPEE, writing

The Toronto Paper Manufacturing Co., Cornwall, Ont.

Howard Smith Paper Mills, Limited, Montreal.

*Rolland Paper Co., Limited, Montreal, Que.

PAPERS, bond

*Howard Smith Paper Mills, Ltd., Montreal.

*Rolland Paper Co., Ltd., Montreal, Que.

PAPERS, building

Bathurst Lumber Co., Ltd., Bathurst, N.B.

*The Riordon Pulp and Paper Co., Montreal, Que.

Standard Paint Co. of Canada, Ltd., Montreal, Que.

PARK SEATS

Stratford Mfg. Co., Ltd., Stratford, Ont.

PARLOR SUNDRIES

The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

PATENTS

Fetherstonhaugh & Co., Toronto.

Ridout and Maybee, Toronto.

PATENT LITIGATION

Ridout and Maybee, Toronto.

PAY ROLL AUDITS

*International Business Machines, Limited, Toronto.

PERFORATED METALS

*Canada Wire & Iron Goods Co., Hamilton, Ont.

PERFORATED MUSIC ROLLS

The Otto Higel Co., Ltd., Toronto.

PERFUMES AND TOILET PREPARATIONS

Sovereign Perfumes Ltd., Toronto.

PETROLEUM PRODUCTS

*The Imperial Oil Co., Limited, Toronto.

PHOTOMAILERS

*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.

PIANOS

Dominion Organ & Piano Co., Ltd., Bowmanville, Ont.

*Gourlay, Winter and Leeming, Toronto.

Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIANO ACTIONS

The Otto Higel Co., Ltd., Toronto.

PIANO KEYS

The Otto Higel Co., Ltd., Toronto.

PIANOS, player

*Gourlay, Winter and Leeming, Toronto.

Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIANO, player actions

The Otto Higel Co., Ltd., Toronto.

PIANO STOOLS and BENCHES

PIPE, cast iron, for water and gas
National Iron Works, Ltd., Toronto.

PIPE COUPLINGS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

PIPE COVERINGS
*Eureka Mineral Wood & Asbestos Co., Toronto.

PIPE ORGANS
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIPES, culvert
Standard Clay Products, Ltd., St. Johns, Que.

*The Pedlar People Limited, Oshawa.

PIPE AND NIPPLES black and galvanized
*Canadian Tube & Iron Co., Ltd., Montreal, Que.

PIPE, sewer
Hamilton and Toronto Sewer Pipe Co., Limited, Hamilton, Ont.

Standard Clay Products, Ltd., St. Johns, Que.

PIPE, soil and fittings
Aulches Foundry, Ltd., Toronto and Winnipeg.

Warden King Ltd., Montreal, Que.

PIPE AND TUBES, wrought
*Page-Hersey Iron Tube and Lead Co., Ltd., Toronto.

PIPE, threading and cutting off machines
John H. Hall & Sons, Limited, Brantford, Ont.

PISTON RODS
*The Canadian Drawn Steel Co., Limited, Hamilton, Ont.

*Union Drawn Steel Co., Limited, Hamilton, Ont.

PLANERS
*Canada Machinery Corporation, Limited, Galt, Ont.

*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

PLANING MILLS
G. & J. Esplen, Montreal, Que.

PLASTERING TROWELS
*E. C. Atkins & Co., Inc., Hamilton, Ont.

PLOWS
J. Fleury's Sons, Aurora, Ont.

PLUGS
*Crouse-Hinds Co., Ltd., Toronto.

PLUMBERS' SUPPLIES
The Garth Co., Montreal, Que.

The James Morrison Brass Mfg. Co., Ltd., Toronto.

*United Brass & Lead, Ltd., Toronto

PLUMBING APPLIANCES
Standard Sanitary Mfg. Co., Ltd., Limited, Toronto.

PLUMBING SUPPLIES
Toronto Plate Glass Importing Co., Limited, Toronto.

PNEUMATIC DRILLS
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

PNEUMATIC MACHINERY
*Canadian Ingersoll-Rand Co., Sherbrooke, P.Q.

POLE LINE MATERIAL (wooden insulator top pins, side blocks, pole steps, cross arms)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.

POLES, Flag
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

POLES, telegraph and telephone, cedar
Ferne Lumber Co., Ltd., Fernie, B.C.

PORK PACKERS AND CHEESE EXPORTERS
The Ingersoll Packing Co., Limited, Ingersoll, Ont.

POSTS, split cedar fence
Ferne Lumber Co., Ltd., Fernie, B.C.

POULTRY SUPPLIES AND MEDICINES
Lee Mfg. Co., Ltd., Pembroke, Ont.

POWDER, blasting
Canadian Explosives, Ltd., Montreal, Que.

POWER PRESSES
Hydraulic Machinery Co., Limited, Montreal.

*William R. Perrin, Ltd., Toronto.

PRESERVATIVE PAINT
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

PRESERVATIVE PAINT FOR BOILERS
*Beveridge Paper Co., Limited, Montreal.

PRESSES, baling and filter
*William R. Perrin, Ltd., Toronto.

PRESSES, hydraulic
Hydraulic Machinery Co., Limited, Montreal.

PRESSES, sheet metal stamping
Brown, Boggs Co., Ltd., Hamilton, Ont.

*Canada Machinery Corporation, Limited, Galt, Ont.

PRESSES, veneer
*Canada Machinery Corporation, Limited, Galt, Ont.

Hydraulic Machinery Co., Limited, Montreal.

*William R. Perrin, Ltd., Toronto.

PRINTERS
Rous & Mann, Ltd., Toronto.

PRINTING AND LITHOGRAPHING
Lawson & Jones, Limited, London Ont.

PULLEYS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.

*Canadian Fairbanks-Morse Company, Ltd., Montreal, Que.

*Dodge Mfg. Co., Ltd., Toronto.

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

PULLEYS, wood split.
*Bernard Industrial Co., Fortierville, P.Q.

PULP, bleached sulphite
The Edward Partington Pulp and Paper Co., St. John, N.B.

PULP, sulphate and sulphite
Bathurst Lumber Co., Ltd., Bathurst, N.B.

PULP
*Brown Corporation, La Tuque, Que.

PUMPS
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

*Canadian Allis-Chalmers, Limited Toronto.

*Bawden Machine Co., Ltd., Toronto.

*Canadian Fairbanks-Morse Company, Limited, Montreal, Que.

*Darling Bros., Ltd., Montreal.

*Ontario Wind Engine & Pump Co., Ltd., Toronto.

*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

Spramotor Co., London, Ont.

PUMPS, boiler feed
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

*Bawden Machine Co., Ltd., Toronto.

*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

PUMPS, centrifugal
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

*M. Beatty & sons, Ltd., Welland, Ont.

*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

*Waterous Engine Works Co., Ltd., Brantford, Ont.

PUMPS, iron
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

*Goold-Shapley-Muir Co., Limited, Brantford, Ont.

*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

*Waterous Engine Works Co., Ltd., Brantford, Ont.

PUMPS, turbine and reciprocating
*Bawden Machine Co., Ltd., Toronto.

*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

John McDougall, Caledonian Iron Works Co., Ltd., Montreal, Que.

PUNCHES
*John Whitfield Co., Toronto.

*Pratt & Whitney Co., Dundas.

PYROMETERS
*Canadian Hoskins Co., Walkerville, Ont.

RADIATORS
Taylor-Forbes Co., Limited, Guelph, Ont.

Warden King, Ltd., Montreal, Que.

RAILINGS, brass and iron
*Dennis Wire & Iron Works Co., London, Ont.

*United Brass & Lead, Ltd., Toronto

RAILS, light
Hammant Steel Car and Engineering Works, Hamilton.

RAILWAY SIGNAL APPLIANCES
General Railway Signal Co. of Canada, Ltd., Montreal, Que.

RAILWAY SUPPLIES
*Canadian Steel Foundries, Ltd., Montreal, Que.

*Chicago Bridge & Iron Works, Bridgeburg, Ont.

B. J. Oughlin Co., Ltd., Montreal, Que.

RAILWAY TARIFF BINDERS
The Esdale Press Ltd., Edmonton.

READY-TO-WEAR GARMENTS, LADIES'
H. C. Boulter Co., Ltd., Toronto.

BEAMERS
*Pratt & Whitney Co., Dundas.

*Butterfield & Co., Rock Island, P.Q.

RECEPTACLES
*Crouse-Hinds Co., Ltd., Toronto.

REED AND RATTAN GOODS
Canada Furniture Mfgs., Limited, Woodstock, Ont.

REFRIGERATORS
Sanderson-Harold Co., Ltd., Paris, Ont.

Lee Mfg. Co., Ltd., Pembroke, Ont.

REFRIGERATING MACHINERY
The Linde Canadian Refrigeration Co., Ltd., Montreal, Que.

REFRIGERATORS, store, homes and institutions
Ham & Nott Co., Ltd., Brantford, Ont.

John Hillock & Co., Ltd., Toronto.

REINFORCEMENT BARS
*Burlington Steel Co., Ltd., Hamilton, Ont.

*The Steel Co. of Canada, Limited, Hamilton, Ont.

*Trussed Concrete Steel Co., Ltd., Walkerville.

REINFORCEMENT FOR CONCRETE
*Canada Wire & Iron Goods Co., Hamilton, Ont.

*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

REINFORCEMENT FOR CONCRETE ROOFING, Metal.
*The Pedlar People Limited, Oshawa.

*Trussed Concrete Steel Co., Ltd., Walkerville.

REVOLVING DOORS
*A. B. Ormsby Co., Ltd., Toronto.

RINGS, gold
Caron Bros., Montreal, Que.

RIVETERS, pneumatic
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

RIVETS
*Canadian Tube & Iron Co., Ltd., Hamilton, Ont.

*The Steel Co. of Canada, Limited, Hamilton, Ont.

*Stowell Screw Co., Ltd., Montreal.

RIVETS, bifurcated and tubular
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

RIVETS AND BURRS, iron, copper and brass
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ROCK DRILLS
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

ROLL PRINTING
*Autographic Register Co., Ltd., Montreal.

Business Systems, Ltd., Toronto.

ROOFING, ready to lay
Standard Paint Co. of Canada, Ltd., Montreal, Que.

*The Barrett Co., Ltd., Toronto and Montreal.

ROOFINGS, plastic and liquid
*Beveridge Paper Co., Limited, Montreal.

ROOF TRUSSES
*The Canadian Bridge Co., Ltd., Walkerville, Ont.

*Dominion Bridge Co., Ltd., Montreal, Que.

ROPE
*Doon Twines Ltd., Doon, Ont.

*Shurly & Derrett, Ltd., Toronto.

ROPE, cotton
Hamilton Cotton Co., Hamilton, Ont.

RUBBER FOOTWEAR
Ames Holden, McCready, Limited, Montreal, Que.

*Gutta Percha & Rubber, Ltd.

The Miner Rubber Co., Limited, Granby, Que.

RUBBER GOODS
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.

*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.

*Gutta Percha & Rubber, Ltd.

RUBBER MOULDS
Bawden Machine Co., Ltd., Toronto.

RUBBER PACKING
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.

*Garlock Packing Company, Hamilton, Ont.

RULES
The Luffkin Rule Co. of Canada, Ltd., Windsor, Ont.

SADDLERY HARDWARE
*Dominion Forge and Stamping Co., Walkerville, Ont.

SAFES
*Goldie & McCulloch Co., Limited, Galt, Ont.

J. & J. Taylor, Ltd., Toronto.

SAMPLE CASES
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.

J. Eveleigh & Co., Ltd., Montreal.

SAND RAMMERS
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

SANDPAPER
*Delany and Pettit, Ltd., Toronto.

SASH CORD, cotton
Hamilton Cotton Co., Hamilton, Ont.

SALT
Canadian Salt Co., Ltd., Windsor, Ont.

SANITARY PAPER TOWELS
*E. B. Eddy Co., Ltd., Hull, Que.

SAW SHARPENING MACHINERY
*Canadian Hart Wheels, Limited, Hamilton, Ont.

SAWS
*E. C. Atkins & Co., Ltd., Hamilton.

Henry Disston & Sons, Limited, Toronto.

Shurly & Deitrich, Galt, Ont.

SAWS, cross-cut and band
*Canada Machinery Corporation, Limited, Galt, Ont.

*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

Shurly & Deitrich, Galt, Ont.

SAWS, circular mill
Shurly & Deitrich, Galt, Ont.

SAWS, hack
*Victor Saw Works, Ltd., Hamilton, Ont.

SAWS, of all kinds
Simonds Canada Saw Co., Limited, Montreal, Que.

SAWS, rip
*Canada Machinery Corporation, Limited, Galt, Ont.

*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

Shurly & Deitrich, Galt, Ont.

SAWMILLS
G. & J. Esplen, Montreal, Que.

*The Waterous Engine Works Co., Ltd., Brantford, Ont.

SAW MILL MACHINERY
*Canadian Allis-Chalmers, Limited, Toronto.

SAWS, specialties
*Victor Saw Works, Ltd., Hamilton, Ont.

SCALES
*Canadian Fairbanks-Morse Company, Ltd., Montreal, Que.

The Gurney Scale Co., Hamilton, Ont.

SCALES, counter
The Gurney Scale Co., Hamilton, Ont.

SCALES, railway track, etc.
The Gurney Scale Co., Hamilton, Ont.

SCREENS
*Canada Wire & Iron Goods Co., Hamilton, Ont.

SCREEN DOORS AND WINDOWS
Sanderson-Harold Co., Ltd., Paris, Ont.

Ham & Nott Co., Ltd., Brantford, Ont.

SCREWS
*John Morrow Screw & Nut Co., Ltd., Ingersoll, Ont.

*The National Acme Mfg. Co., Montreal, Que.

*The Steel Co. of Canada, Limited, Hamilton, Ont.

*Stowell Screw Co., Ltd., Montreal.

*United Brass & Lead, Ltd., Toronto

SCREW PLATES
*Butterfield & Co., Rock Island, P.Q.

SECURITIES, engraved
American Bank Note Co., Ottawa, Ont.

SERGES
Rosamond Woollen Co., Almonte,

SHAFTING

Canada Forge Co., Ltd., Welland,
*Canadian Bond Hanger & Coup-
ling Co., Alexandria, Ont.
*Canadian Drawn Steel Co., Ltd.,
Hamilton, Ont.
*The Goldie & McCulloch Co., Ltd.,
Galt, Ont.
*Union Drawn Steel Co., Limited,
Hamilton, Ont.
*Dodge Mfg. Co., Ltd., Toronto.

SHANTY BLANKETS

Slingsby Mfg. Co., Ltd., Brantford,

SHAPERS

*Canada Machinery Corporation,
Limited, Galt, Ont.
*P. B. Yates Machine Co., Ltd.,
Hamilton, Ont.

SHEAR BLADES, iron

*Galt Knife Co., Ltd.
The Peter Hay Knife Co., Limited,
Galt, Ont.

SHEATHING

*The Barrett Co., Ltd., Toronto and
Montreal.

SHEATHING, asbestos corrugated

*Eureka Mineral Wool & Asbestos
Co., Toronto.

SHEET METAL STAMPINGS

Acme Stamping & Tool Works, Ltd.,
Hamilton, Ont.
*The Pedlar People Limited,
Oshawa.
*W. H. Banfield & Sons, Ltd. To-
ronto.

SHEETS, ETC.

*Tallman Brass & Metal Co., Hamil-
ton, Ont.

SHEETS, galvanized

*Dominion Sheet Metal Co., Ltd.,
Hamilton.
*The Pedlar People Limited,
Oshawa.

SHINGLES

Bathurst Lumber Co., Ltd., Bath-
urst, N.B.

SHINGLE SAWS

*E. C. Atkins & Co., Inc., Hamil-
ton, Ont.

SHIP BUILDERS

*Polson Iron Works, Limited, To-
ronto.
J. & R. Weir, Montreal, Que.

SHIRTS

John W. Peck & Co., Ltd., Mon-
treal, Que.

SHIRTS, workmen's

*A. R. Clarke & Co., Ltd., Toronto.

SHOE PEGWOOD

O. Chalifour, Quebec, Que.

SHOE LININGS

Galt Knitting Co., Ltd., Galt, Ont.

SHOES, running and athletic

Ames-Holden-McCready, Ltd., Mon-
treal, Que.

SHOOKS

Barchard & Co., Ltd., Montreal.

SIGNAL CELLS

Canadian National Carbon Co.,
Ltd., Toronto.

SILENT CHAIN DRIVES

*Canadian Link-Belt Co., Toronto.

SILVER BULLION

Coniagas Reduction Co., Ltd., St.
Catharines, Ont.

SILVERSMITH

Canadian Wm. A. Rogers, Ltd.,
Toronto.
Standard Silver Co., Toronto.

SILVERWARE, sterling

Roden Bros., Limited, Toronto.

SINKS, enamelled

Amherst Foundry Co., Limited,
Amherst, N.S.

SKATES, figure

Canada Cycle and Motor Co., Ltd.,
Toronto.

SKATES, genuine Acme

Canada Cycle and Motor Co., Ltd.,
Toronto.

SKATES, hockey

Canada Cycle and Motor Co., Ltd.,
Toronto.

SKATES, ice

Canada Cycle and Motor Co., Ltd.,
Toronto.

SKATE SHARPENERS

*Canadian Bond Hanger & Coup-
ling Co., Alexandria, Ont.

SKIFFS

Peterboro Canoe Co., Ltd., Peter-
boro, Ont.

SKYLIGHTS

*A. B. Ormsby Co., Ltd., Toronto.
*The Pedlar People Limited,
Oshawa.

SLEIGHS

Tudhope-Anderson Co., Limited,
Orillia, Ont.

SLIPPERS

Ames-Holden-McCready, Ltd., Mon-
treal, Que.

SLOTTERS

*Canada Machinery Corporation,
Limited, Galt, Ont.

SMELTER LINING

*Beveridge Paper Co., Ltd., Mont-
real.

SMOKE CONSUMERS

*The Jones Underfeed Stoker Co.,
Ltd., Toronto.

SMOKE-STACKS

*Steel Trough and Machine Co., Ltd.,
Tweed, Ont.

SOAPS

J. Barsalou & Co., Ltd., Montreal,
Que.

SOAP (soft, oil)

The Imperial Varnish & Color Co.,
Ltd., Toronto.
Sherwin-Williams Co. of Canada,
Limited, Montreal, Que.

SOCKETS

*Crouse-Hinds Co., Ltd., Toronto.

SODA WATER FOUNTAINS

J. J. McLaughlin, Ltd., Toronto.

SOIL PIPE

Anthes Foundry, Ltd., Toronto.

SOLDER

Alonzo W. Spooner, Ltd., Port
Hope, Ont.

*Canada Metal Co., Toronto.

*Tallman Brass & Metal Co., Ham-
ilton, Ont.

SOLDER, silver

Geo. H. Lees & Co., Hamilton.

SOLDER, wire and bar

*American Can Co., Montreal, and
Hamilton.

SOLDERING IRONS AND

COPPERS

Brown, Boggs Co., Ltd., Hamilton,
Ont.

SNOWSHOES

Helt, Renfrew, Ltd., Quebec, Que.

SPECIAL MACHINERY

Globe Engineering Co., Ltd., Hamil-
ton

SPIKES, railway and marine

Starr Mfg. Co., Ltd., Dartmouth,
N.S.

SPIRAL CONVEYORS

*Canadian Mathews Gravity Carrier
Co., Ltd., Toronto.

*The Goldie & McCulloch Co., Ltd.,
Galt, Ont.

SPLIT PEAS

H. Murton, Ltd., Guelph, Ont.

SPIRITS

*Hiram Walker & Sons, Limited,
Walkerville, Ont.

SPORTING MEDALS AND

TROPHIES

Roden Bros., Limited, Toronto.

SPRAYERS

Spramotor Co., London, Ont.

SPRING COTTERS

*Richards - Wilcox Canadian Co.,
Limited, London, Ont.

SPRINGS

*Canadian Steel Foundries, Ltd.,
Montreal, Que.

B. J. Coghill Co., Ltd., Montreal,
Que.

Guelph Spring & Axle Co., Ltd.,
Guelph, Ont.

SPRINGS, carriage and automobile

Guelph Spring & Axle Co., Ltd.,
Guelph, Ont.

SPRINKLER SYSTEMS

*Chicago Bridge & Iron Works,
Bridgeburg, Ont.

*The Bennett & Wright Co., Ltd.,
Toronto, Ont.

*Purdy, Manell, Ltd., Toronto.

*Vogel Co. of Canada, Ltd., Mont-
real, Que.

SPROCKET WHEELS

*Canadian Link Belt Co., Ltd.,
Toronto.

STAINS

R. C. Jamieson & Co., Ltd., Mont-
real, Que.

STAINS, creosote shingle

A. Muirhead Co., Ltd., Toronto.

STAMPINGS

*Dominion Forge and Stamping
Co., Ltd., Walkerville, Ont.

STAMPS, steel, brass and rubber

Pritchard-Andrews Co. of Ottawa,
Ltd., Ottawa, Ont.

STAMP MILLS

*Jenckes Machine Co., Sherbrooke.

STATIONERY, office

Harris Lithographing Co., Toronto.

STEAM PIPE AND BOILER COVER-

INGS, asbestos

*Eureka Mineral Wool & Asbestos
Co., Toronto.

STEAM SHOVELS

*M. Beatty & Sons, Ltd., Welland.

STEAM SPECIALTIES

*C. A. Dunham Co., Ltd., Toronto.

*Darling Bros., Ltd., Montreal.

*Sheldons, Ltd., Galt.

STEAM TRAPS

*C. A. Dunham Co., Ltd., Toronto.

*Canadian Morehead Manufactur-
ing Co., Limited, Woodstock.

STEEL

*Nova Scotia Steel & Coal Co.,
Ltd., New Glasgow, N.S.

*Burlington Steel Co., Ltd., Hamil-
ton, Ont.

STEEL BILLETS AND BLOOMS

*The Steel Company of Canada,
Limited, Hamilton.

STEEL BUILDINGS

*The Canadian Bridge Co., Ltd.,
Walkerville, Ont.

*Dominion Bridge Co., Ltd., Mont-
real.

*McGregor & McIntyre, Ltd., To-
ronto.

*Mackinnon, Holmes & Co., Ltd.,
Sherbrooke, P.Q.

*The Pedlar People Limited,
Oshawa.

*Trussed Concrete Steel Co. of
Canada, Limited, Walkerville, Ont.

STEEL CABINETS

J. & J. Taylor, Ltd., Toronto.

STEEL CASTINGS

*Canadian Steel Foundries, Ltd.,
Montreal, Que.

*Dominion Steel Foundry Co., Ltd.,
Hamilton.

STEEL FILING EQUIPMENT

*Office Specialty Mfg. Co., Ltd.,
Newmarket, Ont.

STEEL PLATE WORK

*Mackinnon, Holmes & Co., Ltd.,
Sherbrooke, P.Q.

*Toronto Iron Works, Ltd., Toronto.

STEEL RODS

*The Steel Co. of Canada, Ltd.,
Hamilton.

STEEL SASH

*Dennis Wire & Iron Works Co.,
London.

*Trussed Concrete Steel Co. of
Canada, Limited, Walkerville, Ont.

STEEL SHELVEING

*Dennis Wire & Iron Works Co.,
London.

STEEL WIRE RODS

*The Steel Company of Canada,
Limited, Hamilton.

STELLITE

*Deloro Smelting & Refining Co.,
Ltd., Deloro and Toronto.

STENCILS, brass

Pritchard-Andrews Co. of Ottawa,
Ltd., Ottawa, Ont.

STEREOTYPING

Central Press Agency, Toronto

STOKERS

*The Jones Underfeed Stoker Co.,
Ltd., Toronto.

STOOLS AND BENCHES, piano and

organ

*Otterville Mfg. Co., Ltd., Otter-
ville, Ont.

STOOLS, steel factory

*Steel Trough and Machine Co., Ltd.,
Tweed, Ont.

STONE

The Hagersville Contracting Co.,
Hagersville, Ont.

STONEWARE

*Jas. W. Foley & Co., St. John, N.B.

STORAGE BATTERIES

*Canadian General Electric Com-
pany, Ltd., Toronto.

STORE FITTINGS

The Canadian Office & School
Furniture Co., Ltd., Preston, Ont.

STOVES

Smith Foundry Co., Ltd., Frederic-
ton, N.B.

Tudhope-Anderson Co., Limited,
Orillia, Ont.

STOVE LININGS

Standard Clay Products, Ltd. St.
Johns, Que.

STOVES AND RANGES

Lee Mfg. Co., Ltd., Pembroke, Ont.

The Jas. Smart Mfg. Co., Ltd.,
Brockville, Ont.

McClary Mfg. Co., London, Ont.

STREET LIGHTING FIXTURES

*Crouse-Hinds Co., Ltd., Toronto.

STRETCHERS, lace curtain

*Otterville Mfg. Co., Ltd., Otter-
ville, Ont.

STRUCTURAL STEEL

*Canadian Allis-Chalmers, Limited,
Toronto.

*Dominion Bridge Co., Montreal.

*Hamilton Bridge Works Co., Ltd.,
Hamilton.

*Manitoba Bridge & Iron Works,
Ltd., Winnipeg.

*McGregor & McIntyre, Ltd., To-
ronto.

*McKinnon Holmes & Co., Sher-
brooke, P.Q.

*The Canadian Bridge Co., Ltd.,
Walkerville, Ont.

SUIT CASES

J. Eveleigh & Co., Ltd., Montreal.

The M. Langmuir Mfg. Co. of To-
ronto, Ltd., Toronto.

SUPPLY DEALERS

*The Foundation Co., Limited,
Montreal.

SURFACERS

*Canada Machinery Corporation,
Limited, Galt, Ont.

*P. B. Yates Machine Co., Ltd.,
Hamilton, Ont.

SWITCHBOARDS

*Canadian General Electric Com-
pany, Ltd., Toronto.

*Crouse-Hinds Co., Ltd., Toronto.

SWITCHES

*Crouse-Hinds Co., Ltd., Toronto.

SWITCHES, railway

Canadian Ramapo Iron Works, Ltd.,
Niagara Falls, Ont.

SWITCHES AND FROGS

*Canadian Steel Foundries, Ltd.,
Montreal, Que.

SWITCH STANDS

Canadian Ramapo Iron Works, Ltd.,
Niagara Falls, Ont.

TABLE COVERS, chenille

Hamilton Cotton Co., Hamilton,

- TOOLS, track**
B. J. Coghlin Co., Ltd., Hamilton, Ont.
- TOOLS, sheet metal workers'**
Brown, Boggs Co., Ltd., Hamilton.
- TRACK, steel, portable**
Hamman Steel Car and Engineering Works, Hamilton.
- TRACTORS, kerosene and gasoline**
*Gilson Manufacturing Co., Ltd., Guelph.
- TRADE MARKS AND DESIGNS**
Ridout & Maybee, Toronto.
- TRANSFORMERS**
*Canadian General Electric Company, Ltd., Toronto.
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines.
- TRANSLATIONS INTO FRENCH**
Raoul Renault, Quebec City.
- TRANSMISSION MACHINERY**
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Canadian Link Belt Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*The Waterous Engine Works Co., Ltd., Brantford.
- TRAPS**
*C. A. Dunham Co., Ltd., Toronto.
*Canadian Morehead Mfg. Co., Woodstock.
- TROLLEYS**
*Richard-Wilcox Canadian Co., Limited, London, Ont.
*Northern Crane Works, Limited, Walkerville.
- TRUCKS**
*Canadian Fairbanks-Morse Company, Ltd., Montreal, Que.
The Gurney Scale Co., Hamilton.
*Northern Crane Works, Limited, Walkerville.
- TRUCKS, brick, tile and lumber**
*Waterous Engine Works Co., Ltd., Brantford.
- TRUCKS, fibre and reinforced**
*Beveridge Paper Co., Limited, Montreal.
- TRUCKS, motor**
*National Steel Car Co., Limited, Hamilton.
- TRUCKS, warehouse and factory**
The W. S. Mahaffy Co., Toronto.
- TRUCKS, steel, forge and foundry**
Hamman Steel Car and Engineering Works, Hamilton.
- TRUCKS FOR OFFICE AND VAULT USE**
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
- TRUNKS**
Lamontagne Ltd., Montreal, Que.
J. Eveleigh & Co., Ltd., Montreal.
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.
- TUBING, brass and copper**
*Booth-Coulter Copper & Brass Co., Ltd., Toronto.
Canadian Seamless Wire Co., Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.
- TUBING, Fibre**
*Beveridge Paper Co., Limited, Montreal.
- TUBING, gold and silver**
Canadian Seamless Wire Co., Toronto.
- TUMBLERS, foundry**
*Northern Crane Works, Limited, Walkerville.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
- TURBINES, steam**
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines.
- TURPENTINE**
*Brown Corporation, La Tuque, Que.
- TWEEDS**
Rosamond Woollen Co., Almonte, Ont.
- TWINES**
*Doon Twines Ltd., Doon, Ont.
*Shurly & Derrett, Ltd., Toronto.
- TWINES, binder**
Brantford Cordage Co., Ltd., Brantford, Ont.
- TWINES, cotton**
Hamilton Cotton Co., Hamilton, Ont.
- TWIST DRILLS**
*John Morrow Screw and Nut Co., Ltd., Ingersoll.
*Pratt and Whitney Co., of Canada, Dundas, Ont.
*The Wilt Twist Drill Co., Ltd., Walkerville, Ont.
- UNDERWEAR**
Galt Knitting Co., Ltd., Galt, Ont.
- UNDERWEAR, imperial**
Kingston Hosiery Co., Ltd., Kingston, Ont.
- UNIONS**
*Dart Union Co., Ltd., Toronto.
*Otterville Mfg. Co., Ltd., Otterville, Ont.
- UPHOLSTERED FURNITURE, leather and tapestries**
Imperial Rattan Co., Ltd.
- VALVES**
*Canadian Fairbanks-Morse Company, Ltd., Montreal, Que.
*Jenkins Bros., Ltd., Montreal.
*Kerr Engine Co., Ltd., Walkerville.
T. McAvity & Sons, Ltd., St. John, N.B.
*Penberthy Injector Co., Ltd., Windsor.
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TORONTO, CANADA

Vol. XIX., No. 6

TORONTO, OCTOBER, 1918

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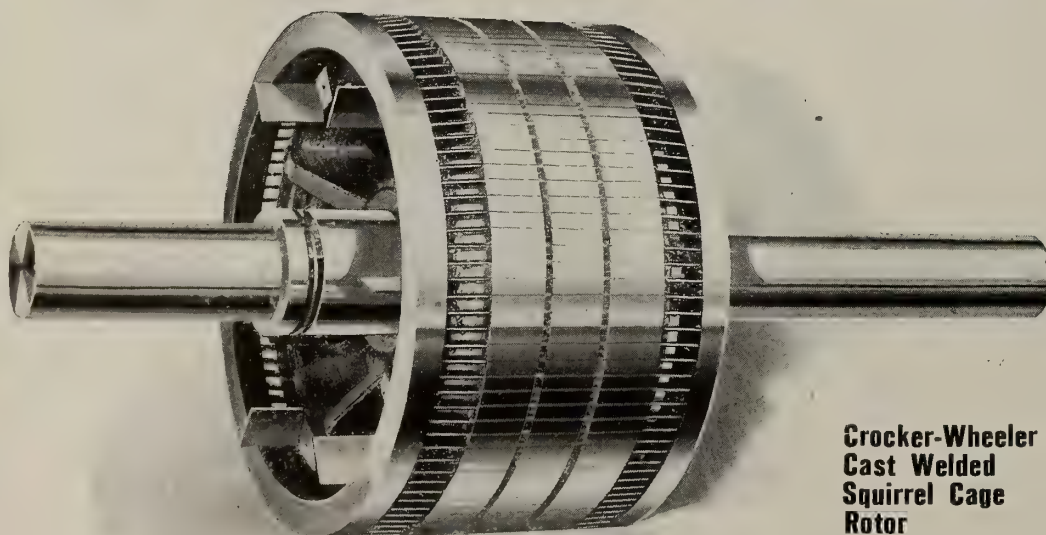
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**Crocker-Wheeler
Cast Welded
Squirrel Cage
Rotor**

Two-thirds of the story
is in the DESIGN.

Canadian Crocker-Wheeler Induction Motors

Note the efficient design of the Rotor: solid metal winding allows no loose joints; there are no bolts, rivets or screws to come away; no sparking or arcing at bars or rings.

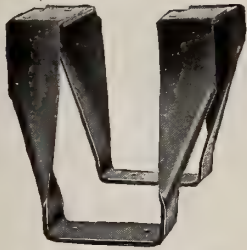
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THE CANADIAN CROCKER - WHEELER COMPANY LIMITED

Manufacturers and Electrical Engineers

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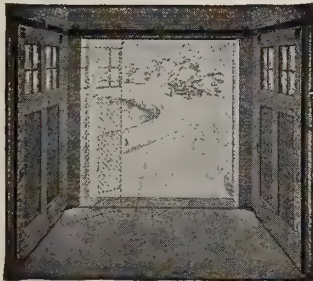


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The Ceiling!**

**The Modern Method of Factory
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A Richards-Wilcox Carrier System—either I-Beam or Trolley—will pay for itself in one year on actual pay-roll saving, not to mention the increased efficiency. Occupies no floor space. Always ready for use. Operates easily, one man can handle 2,500 lbs. Trolley carriers made in sixteen styles and sizes for loads up to 2,500 lbs. For heavier loads use I-Beam Equipment.

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"A hanger for any door that slides"



**"R-W"
TROLLEYS
ARE BEST
FOR ALL
SLIDING
DOORS**

Specified by leading architects and engineers throughout Canada and the United States. "A hanger for any door that slides."

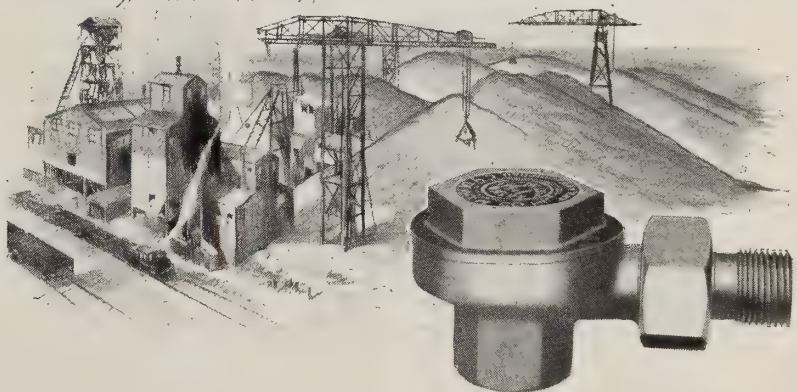
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**Your Share of
The Nation's Coal**

**HOW TO MAKE IT GO
FARTHER AND AT THE
SAME TIME MAKE EVERY
RADIATOR GIVE OFF 100%
OF HEAT NOISELESSLY**



NO matter how hot a fire you have in your boiler, the radiators cannot heat up if they are choked with air and water—two of the greatest coal wasters that the owner of a home, apartment, office or factory has to contend with.

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Get all the air and water out—and you will not need so hot a fire; you will burn less coal and get more heat out of it. That is just what the Dunham Radiator Trap does—automatically removes the coal-wasting air and water. At the same time it makes the heating system absolutely noiseless. The radiators heat up quickly—the coal lasts longer—just the ideal conditions for economy and comfort.

The Dunham Radiator Trap—one of the fundamentals of the Dunham Heating Service—can be applied to your present heating system without extensive alterations. The coal saved will largely offset the cost of installation.

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Write now: winter is on its way! And the coal question must be solved now if you want heating comfort this winter.

C. A. DUNHAM COMPANY, LTD.
TORONTO, ONTARIO

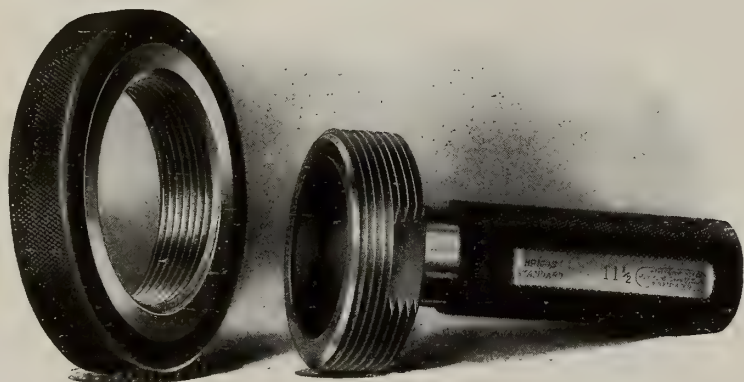
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HEATING SERVICE

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MILLING CUTTERS

In High Speed or Carbon Steel



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Special Forms

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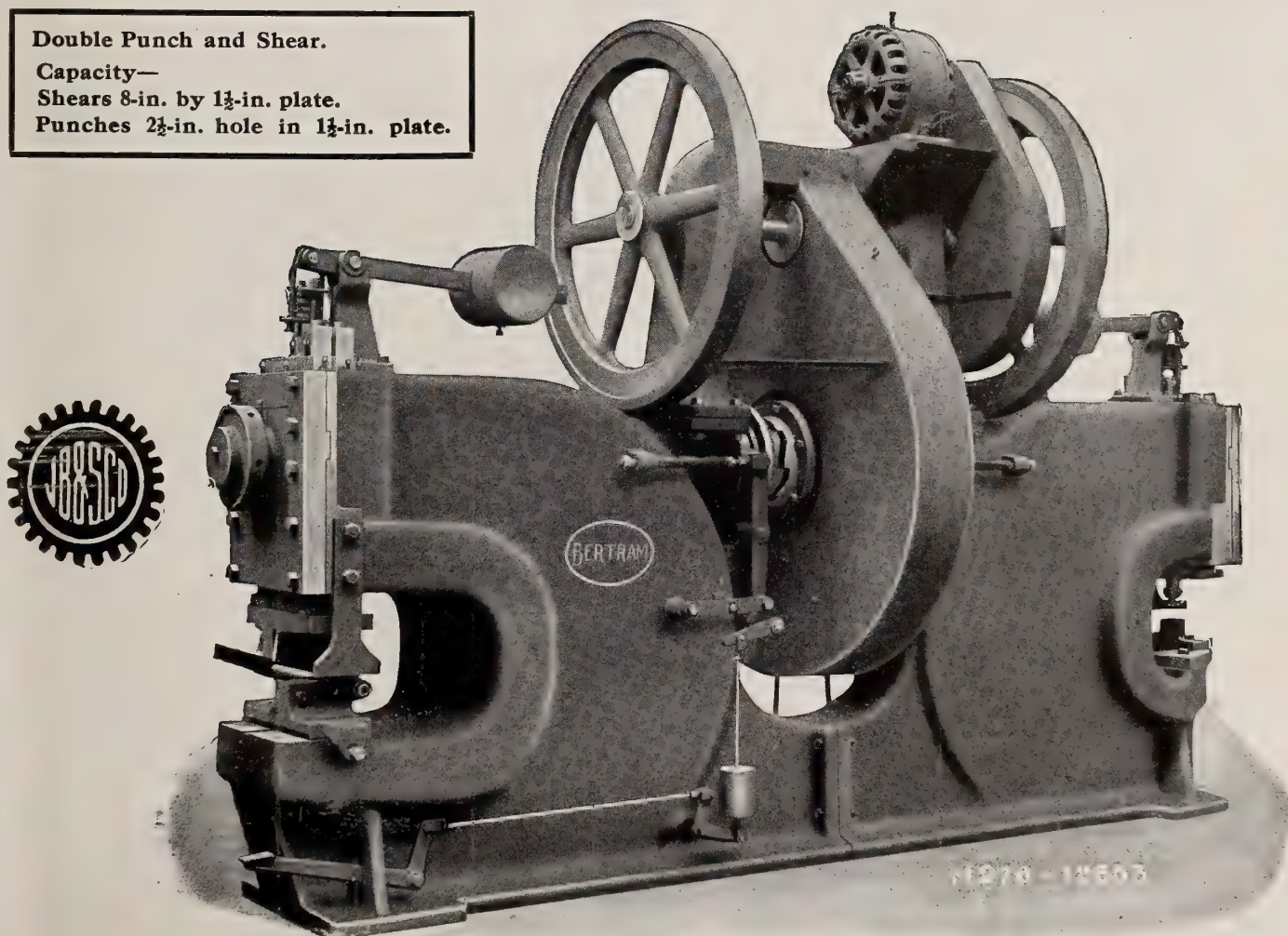
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609 Bank of Ottawa Bldg.

Double Punch and Shear.

Capacity—

Shears 8-in. by 1½-in. plate.

Punches 2½-in. hole in 1½-in. plate.

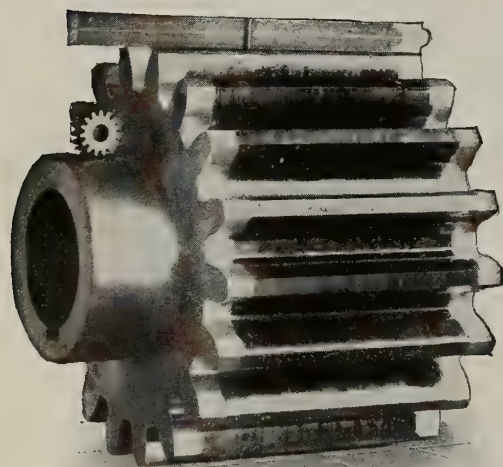


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Silent in operation and
durable.

Large sizes or small.



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of Rawhide Gear blanks in
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Get our quotations.

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An excellent finish can be obtained
and your production greatly in-
creased if our instructions are fol-
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way as tool steel will not produce
results.

CONSULT OUR SERVICE DEPARTMENT

A RECORD OF PERFORMANCE

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Feed—3 feet per minute.

Production—Six 30-foot shafts turned
to 0.001 inch limit with one grind.

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Limited

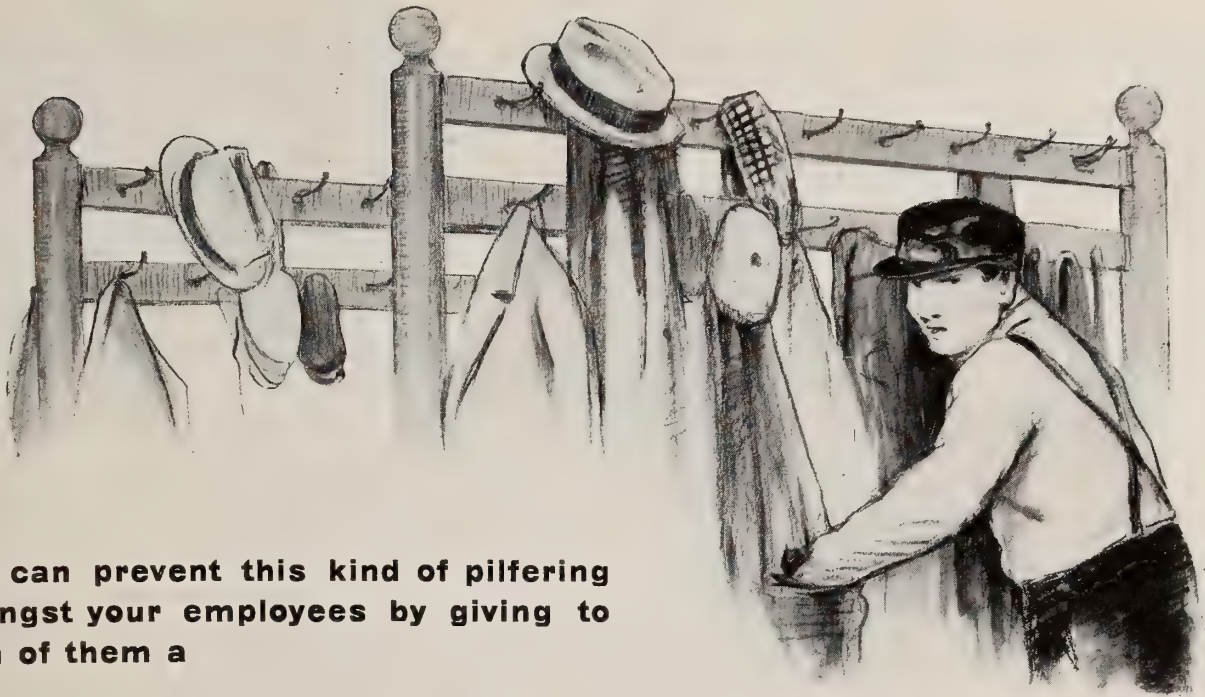
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Toronto

200 King St. W.

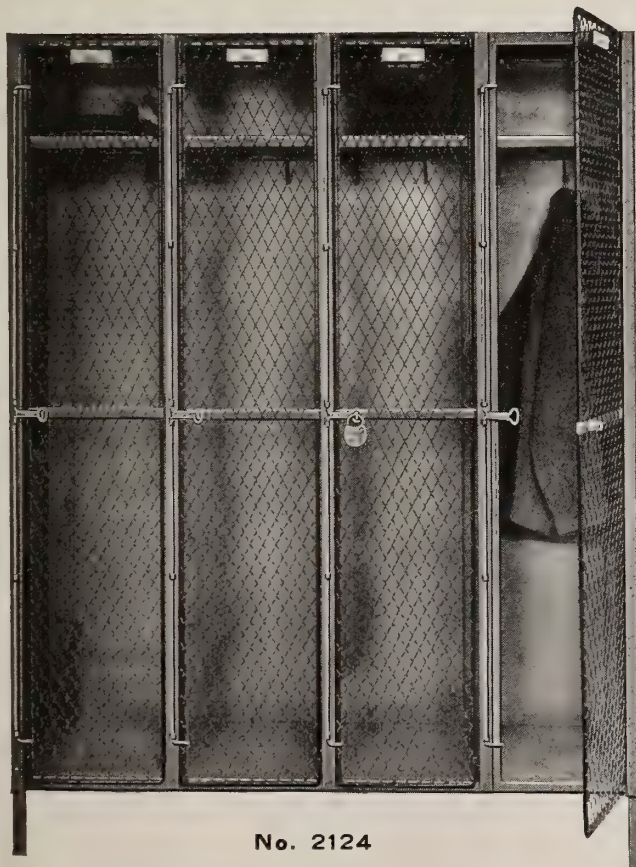
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315 Craig St. W.



You can prevent this kind of pilfering amongst your employees by giving to each of them a

MEADOWS METAL LOCKER



No. 2124

The "Sure Grip" three-point locking device secures the door at three points and prevents it from being sprung out. Masterkeyed padlocks are recommended but we can fit lockers with cabinet locks if desired.

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COMPANY, LIMITED

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479 West Wellington Street, Toronto, Canada

Craftsman Quality

**F DU PONT
FABRIKOID**

For
Cushions
Window
Seats
and



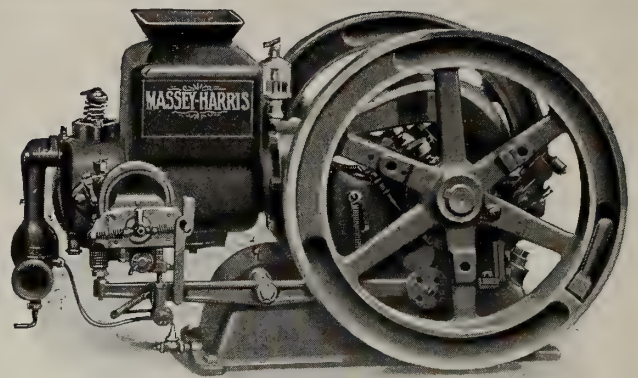
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FABRIKOID is made in exact imitation of almost every kind of fine leather. It is soft and pliant and suitable for the best furniture upholstery of every kind. It is water-proof, dust-proof, stain-proof and sanitary. It is made in shades to blend admirably with the furnishings of any particular room, and adds a tone of comfort and distinction to it.

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MASSEY-HARRIS ENGINES are good all the way through

¶ Every detail has been worked out with the greatest care—nothing has been slighted, either in the design or construction, and as a result they have won an enviable reputation for reliability and efficiency.

¶ One of these engines affords a convenient source of power, always ready, winter or summer, and costs nothing for keep when not in use.

¶ Made in sizes from 2 to 20 h.p., stationary, portable or semi-portable.

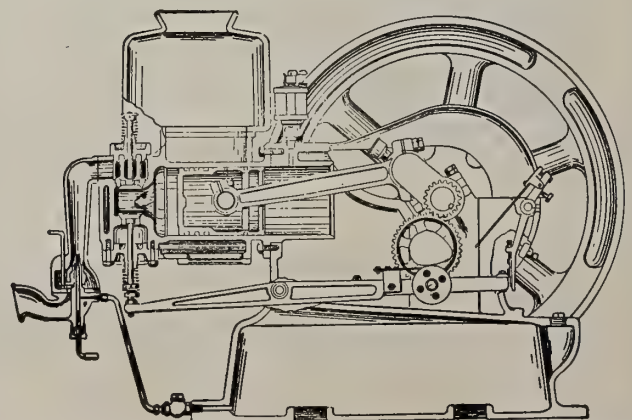
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We make boilers of all kinds for any service.

We are also sole Canadian makers of Erie City Water Tube Boilers, Vertical and Horizontal.

The large number of pleased and satisfied owners of "INGLIS" Boilers is our best advertisement.

For (52) fifty-two years our boilers have been the standard. We have installations of our different types of boilers, which our representatives will be pleased to show to prospective purchasers. Write us for prices, etc.

INGLIS' PRODUCTS ARE "MADE-IN-CANADA"

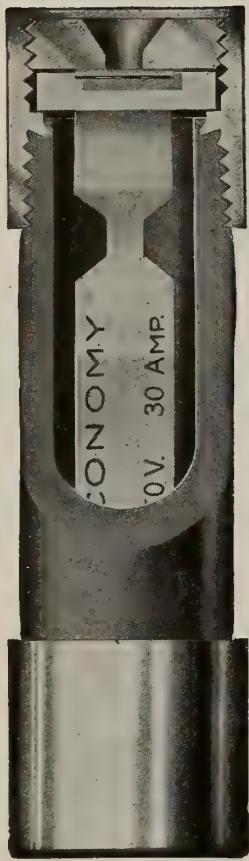
The John Inglis Company, Limited

ENGINEERS AND BOILERMAKERS

14 Strachan Avenue

Toronto, Canada

Ottawa Representative: J. W. ANDERSON, 7 Bank Street Chambers



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Maintenance Cost **80%**

Economy "Drop Out" Renewal Links are responsible for this saving.

A "Drop Out" Renewal Link restores a blown Economy Fuse to its original efficiency.

A sustained arc is impossible.

It's the work of a moment for even a novice to replace the link and renew the fuse.

First in its field—first in efficiency.

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UNITY BUILDING - - MONTREAL

*Manufacturers in Canada of S. & C. High Potential Fuses
to 150,000 volts.*



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Mr. Manufacturer:

Are you satisfied with the quality of your Malleable Iron Castings?
One of our **newer** customers writes us:

"We have never had better Malleable Castings and we have seldom received such good ones during the whole period of our manufacture, which is something over 40 years.

This is high praise but we consider it is quite justified."

MAY WE EXPECT YOUR NEXT INQUIRY?

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Where Jenkins Bros.' Valves are Made

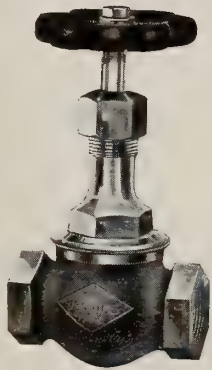


Fig. 106



Factory and Head Office of
JENKINS BROS. LIMITED
Montreal, Canada



Fig. 141

Where plants are scientifically operated, valve value is measured by service rendered, and by yearly *lack* of up-keep cost.

If valves break down before other items of equipment, an injustice is done to the entire plant; because valves should last as long as good plant equipment. Good valves do.

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JENKINS BROS.' VALVES will keep your plant running and save you money.

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A steam user who installs Jenkins Bros.' Valves, can do so with the knowledge that he is protected by the maker against defects and imperfections. Our dealers have instructions to replace, without question, any imperfect or defective Jenkins Bros.' Valve returned to them.

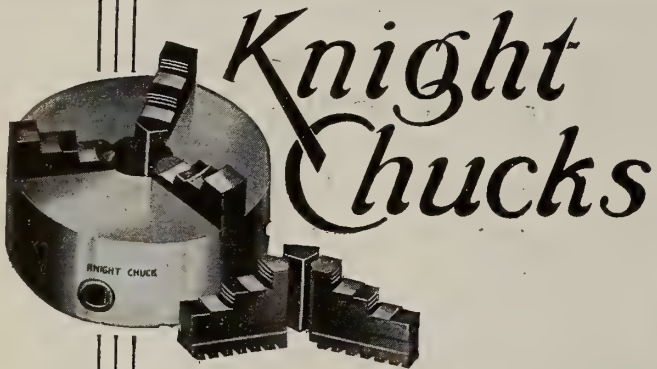
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So do plant owners and machinists everywhere in Canada.

That is why machine shops in every province of the Dominion use Knight chucks. That is why the men recommend them.

Export trade solicited.

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"BEATTY"

Material Handling Plant has back of it 55 years of successful experience.

HOISTING ENGINES
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Specialists in Heavy Duty Bronze Bearings

Wentworth products are thoroughly dependable. Link up with us and you'll be sure of best quality and service.

The Wentworth Mfg. Co., Limited

Hamilton, Ontario



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Wood or Steel--Which?

There is a United States embargo on steel except for war orders, but we do not need to use this as a particular argument to persuade you to buy Dodge Wood-Split Pulleys.

Dodge Wood-Split Pulleys have sufficient qualities of their own to justify their use at any time in preference to metal pulleys.

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And, you can get Dodge Wood-Split Pulleys when you order them—No waiting—No delays.

We ship in all sizes from 4-inch diameters up to 6-feet diameters on the day orders are received.

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WOOD SPLIT PULLEYS

Speed and Economy— and Build Fireproof!

DON'T think that to save time you must erect a flimsy, inflammable building. Hy-Rib concrete roof and sidings are as quickly built with local labor and materials; provide fire protection as well as attractive appearance; can be used with framework of wood or steel.

Hy-Rib produces monolithic sidings two inches thick at half the cost of other permanent constructions. Roofs of Hy-Rib are light in weight, fireproof and economical. The simplicity of Hy-Rib construction, saving forms and studs, permits a notable saving both in labor cost and in time of erection.

Not only for sidings and roofs, but for ceilings, partitions, floors, furring, etc., in fact, for all plaster, stucco, and concrete work, Hy-Rib is widely used.

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CANADA'S FUEL CONTROLLER REPORTS:—

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FOR CANADA THIS WINTER.

THERE IS A SURPLUS OF ANTHRACITE BUCKWHEAT
NOW AVAILABLE.

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WHAT “THE GALT SPRINKLER STOKER” CAN DO

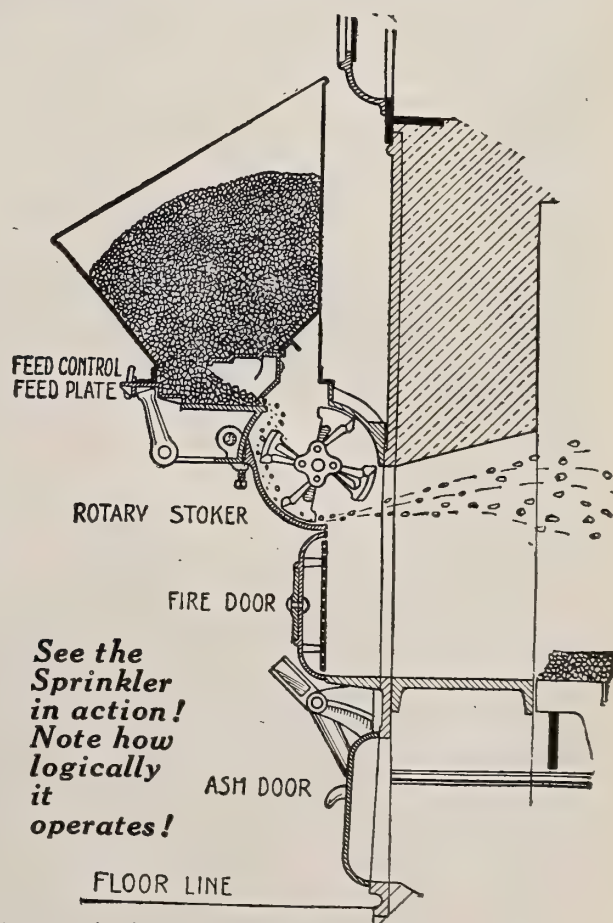
IT WILL BURN OVER FIFTY PER
CENT. ANTHRACITE BUCKWHEAT
WITHOUT DECREASING EFFICIENCY

AND DOUBLE THE BOILER
CAPACITY FOR PEAK LOADS
WHEN REQUIRED.


THE GALT STOKER POSITIVELY
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The new Hubbell Plant has already begun manufacturing operations and will be prepared to make immediate delivery of Hubbell goods to Distributors and Retail Dealers throughout the Dominion.

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ME1001-3445



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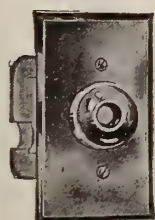
MD100H



No. 5691



No. 5573

Cap No. 5421
Rec. No. 5547Cap No. 5421
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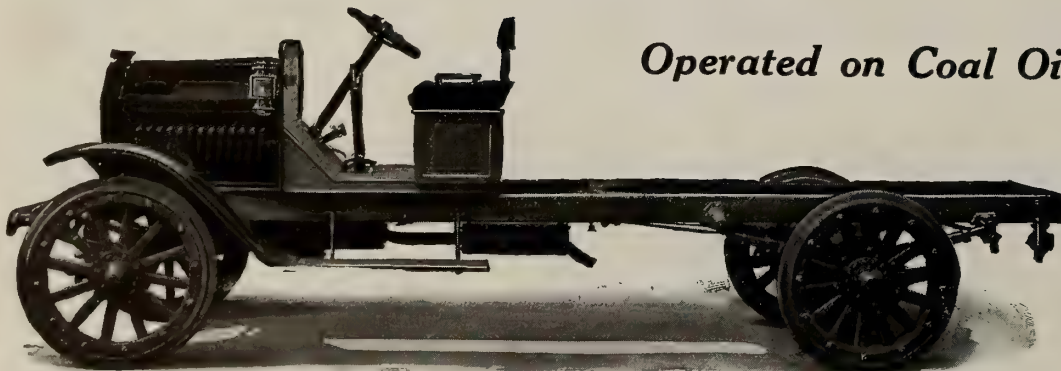
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Preston, Ont., Oct. 25 1917

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Yours truly,
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These Doors may save YOU Money

YOU may be like the Crown Furniture Company of Preston—They wanted Fire Doors but did not wish to use the ordinary sliding or swing, tin-clad doors. They did not know exactly what type of door would serve them best.

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You may need this type of door. You may have dangerous openings in your factory, openings that cannot be closed with ordinary fire-doors. You may be losing valuable space with swing doors.

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You can do so while at the same time getting better results from your boilers, by substituting obsolete firing systems with the

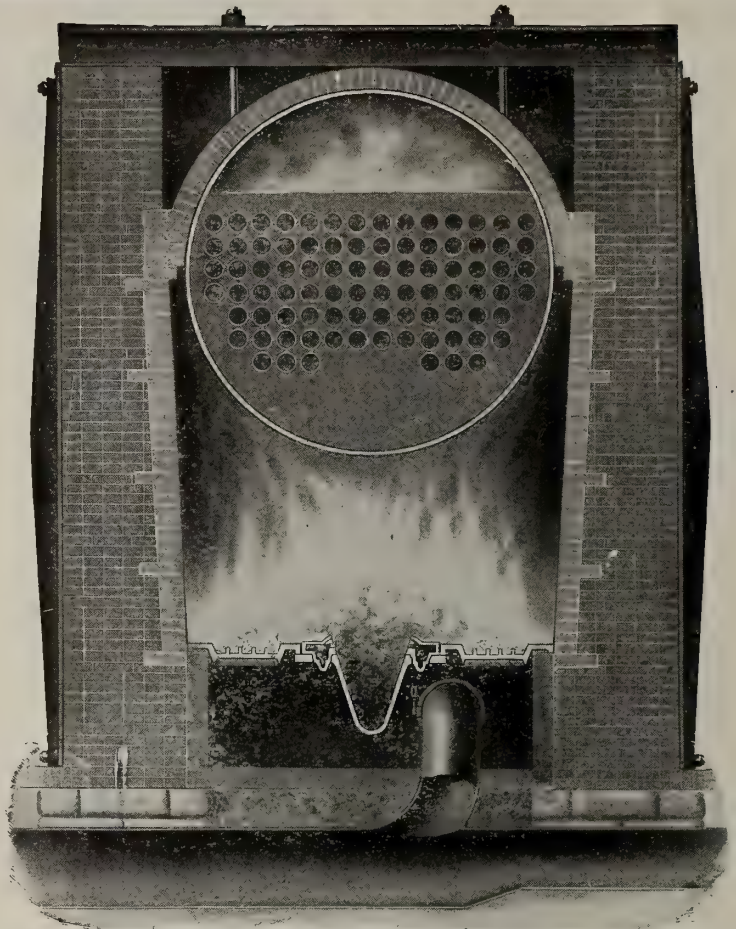
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With this modern method of stoking you can use any grade of bituminous coal from Dust to Run of Mine, and your savings in fuel cost will run from 15% to 25%. Mark you—this is not a theory. It is a fact. Hundreds of steam boilers throughout the country are being fired to-day with Jones Underfeed Stokers. In every case the Jones has made good.

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Jones Underfeed Stoker Co., Ltd.

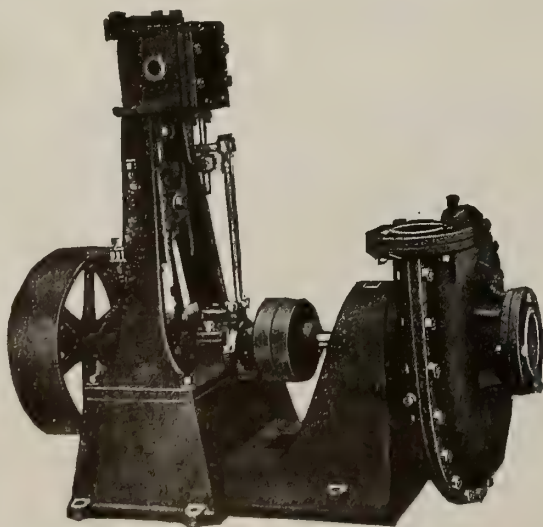
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We do everything to sell our

PUMPS

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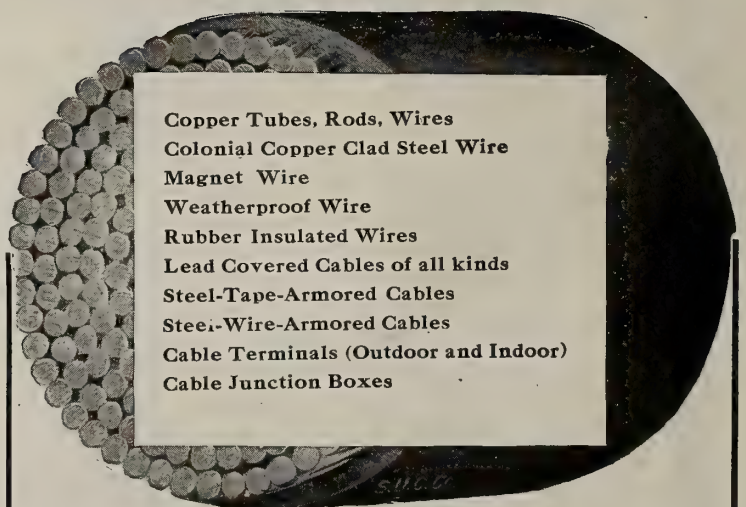


Give us an opportunity to show you how well we can fit your needs.

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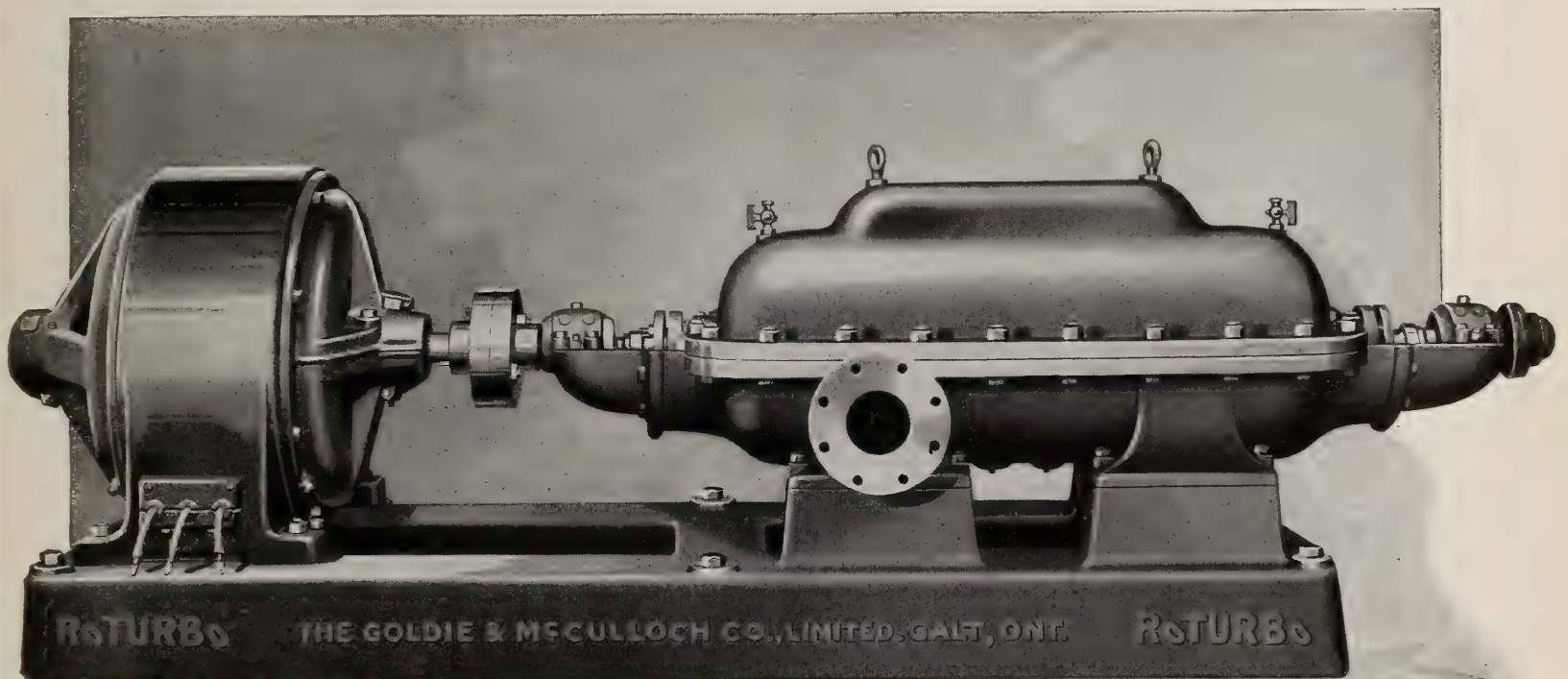
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RoTURBo PUMPS

ARE SELF-REGULATING

And bear in mind that in addition to this self-regulating feature the original high efficiency of **RoTURBo** Pumps remains practically constant throughout a wide range of duty.



Motor Driven Type B4, Eight Stage REES **RoTURBo**
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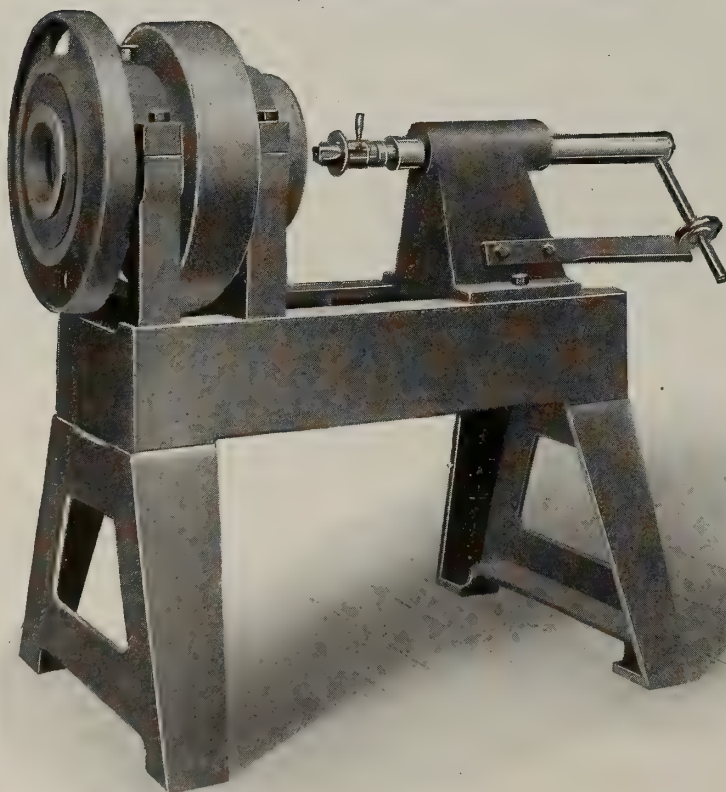


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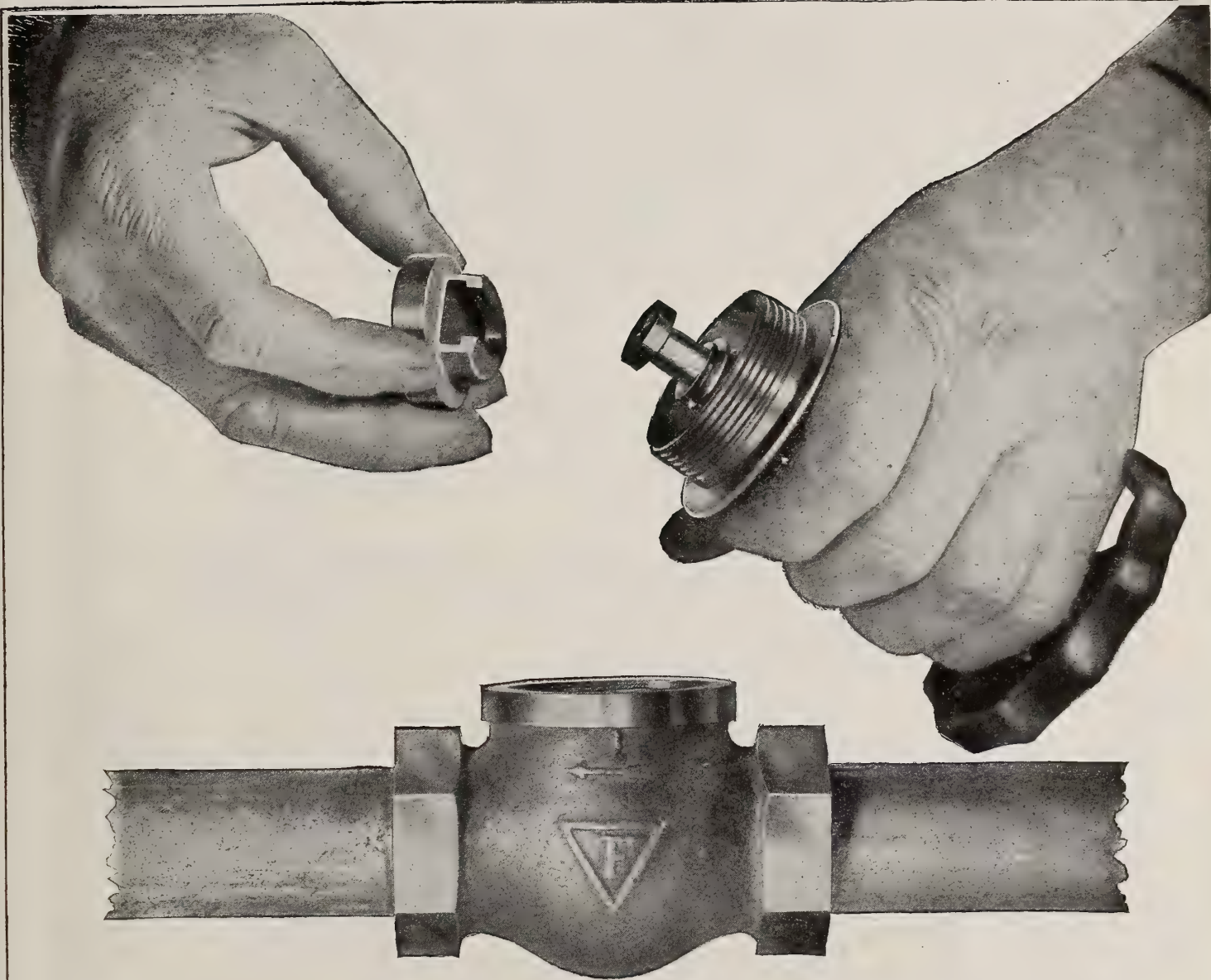
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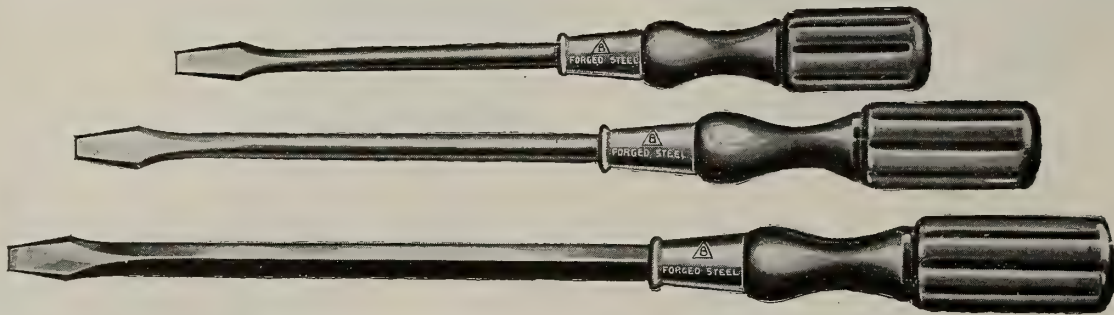


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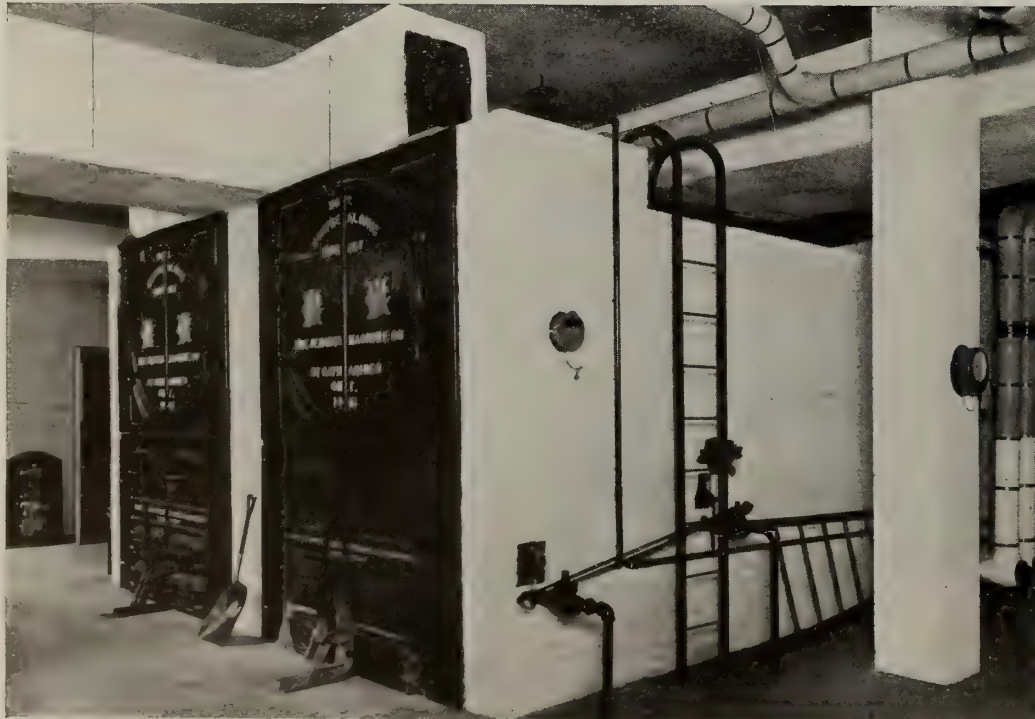
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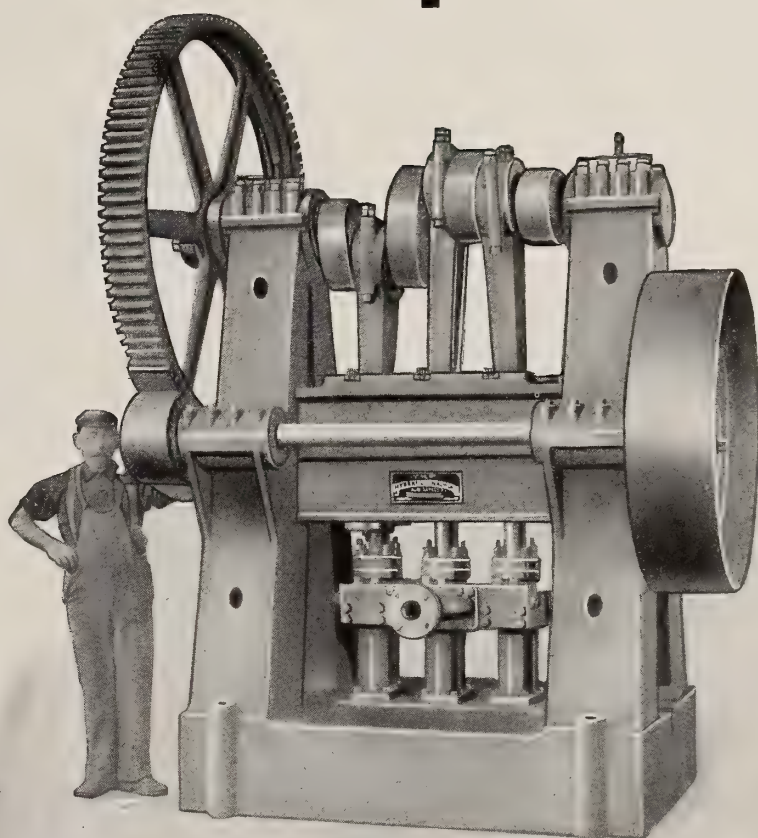
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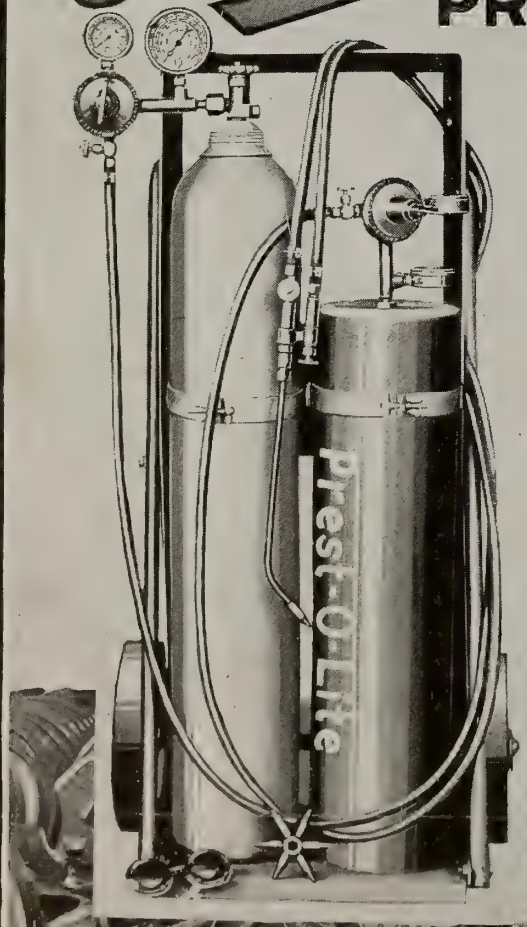
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Conserve Steel and Iron -Cut Out the Scrap Pile

Prest-O-Lite PROCESS



ANALYZE YOUR SCRAP PILE!

YOU'LL probably find conditions such as our research men are finding in many industries—months' supplies of valuable materials easily available for use by oxy-acetylene welding.

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The welding outfit is portable—available at all times for outside work as well as for shop use.

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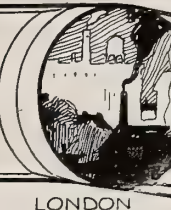
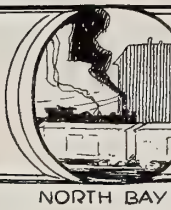
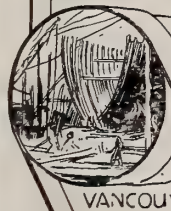
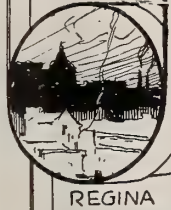
No matter what other welding method you now use, a Prest-O-Lite outfit put to work in your shops will speedily pay you profits. Write for special literature and data—now. Address Dept. C-104.

Prest-O-Lite Company
of Canada, Limited

Prest-O-Lite Building,
Corner Elm Street and Centre Avenue
Toronto

Plants at:

Toronto Ont.; Shawinigan Falls, P.Q.;
Merriton, Ont.; St. Boniface, Man



Dominion Rubber System Belting Service is Dominion Wide

No matter what your business or where it is located, there is within telephone distance of your plant, a branch of the Dominion Rubber System and a belting expert.

These technical experts are not merely salesmen, *they know belting* and its requirements thoroughly and their services are at your command without charge, whether you are a customer or not. The Dominion Rubber System's belting men have worked out successfully many seemingly impossible belting problems, and whether your difficulties are actually due to belting or some more remote cause they will help you to solve them.

Put your problems up to the Dominion Rubber System experts—*place your belting equipment in their care—they will shoulder the responsibility* for giving you efficient service in all your belting, no matter what it is used for.

They are able to "speed up" your production—reduce your manufacturing or belting costs or eliminate unnecessary delays and "shut downs."

The Dominion Rubber System is not only the largest but the oldest organization of its kind in Canada and has specialized in belting for more than fifty years—its entire facilities and Dominion Wide Service are at your command.

If you are in trouble or in doubt about a belt, 'phone, wire or write our nearest branch and *let us prove that our Belting Service means more than just selling belts.*

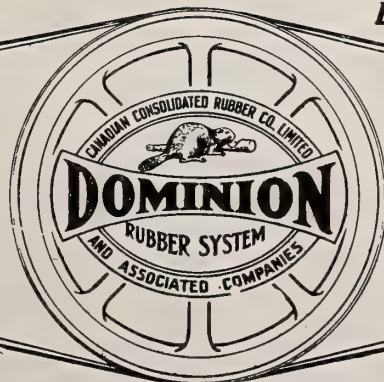
Canadian Consolidated Rubber Co., Limited
Head Office, Montreal

14

SERVICE

BRANCHES

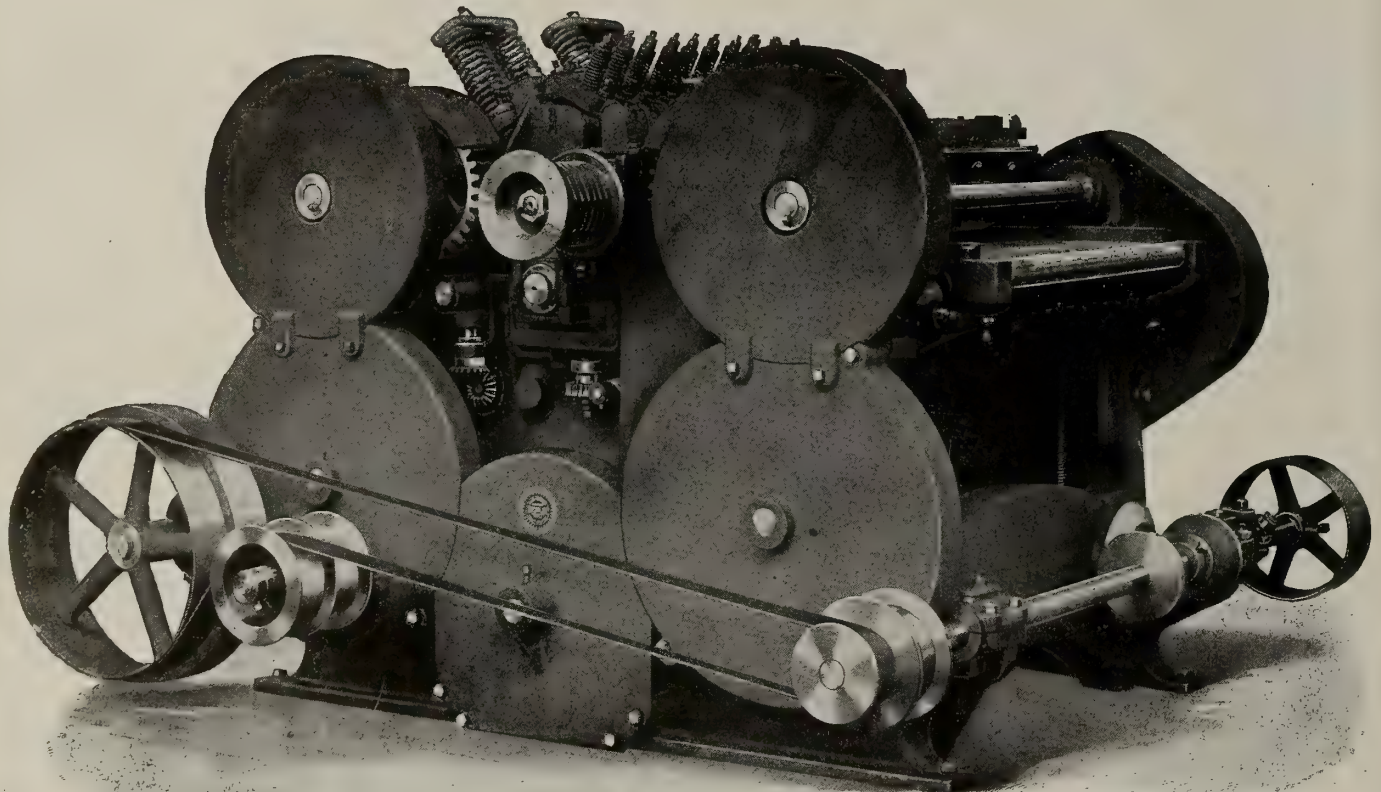
Halifax,
St. John,
Quebec,
Montreal,
Ottawa,
Toronto,
Hamilton,
Kitchener
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North Bay.



Fort William,
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Exceptional Versatility

is an outstanding feature of the



No. 177 Double Surfacers

This machine is not so large that it cannot profitably be used to surface thin or narrow stock, yet it is sufficiently heavy to give a good finish to timbers up to its capacity. For warped and crooked stock the divided, corrugated rolls furnish a positive feed. Solidly constructed for long service.

The many interesting features of this machine are set forth in our detailed illustrated circular. Free on request. Send for your copy NOW.

P. B. Yates Machine Co. Ltd.

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Manufacturers of High Grade Power Transmission Appliances

Office and Works: Fortierville, Que., Canada

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The single telephone wire in this cable amounted to nearly a billion feet or enough to encircle the earth at the Equator more than seven times.

The supremacy of the Northern Electric Company as the largest makers of bare and insulated wires and cables for all purposes has never been questioned.

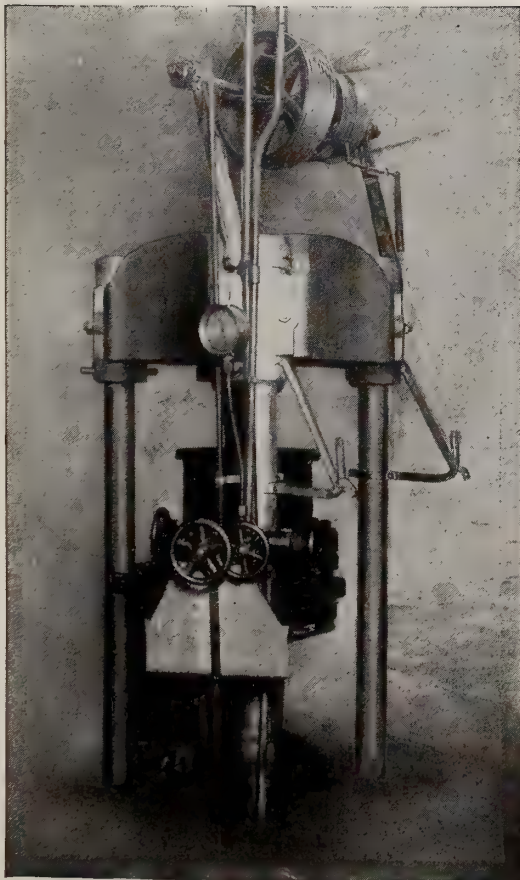
Northern Electric Company
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MONTREAL HALIFAX TORONTO WINNIPEG
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Unqualified manufacturing and shipping facilities insure prompt deliveries.

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Nickel Genuine stands up under extreme heat

In foundries, glass works, etc., where machinery bearings are subjected to intense heat from without, in addition to the heat produced by friction, a peculiarly hard babbitt must be used. The mixing of such a metal is an exact science—a science rarely crowned with such a success as Hoyt's Nickel Genuine. This wonderful heat defier is made with scrupulous care, is always correct in mixture to an ounce, and can be relied upon to give best results where bearings are subjected to exceptional heat. *If you've had trouble with soft bearings try Nickel Genuine.*

HOYT METAL COMPANY

Toronto, Canada

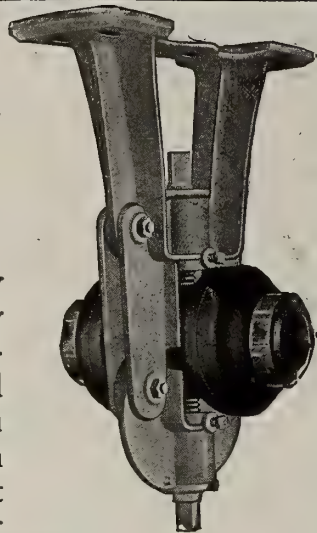
New York, N. Y.

London, Eng.

St. Louis, Mo.

YOUR BIT

You have probably invested in Victory Bonds, and contributed to the Red Cross. Perhaps you are economizing in many ways also; but there is still another way to help—save power.



Chapman Double Ball Bearings

save 20 per cent. of power by eliminating friction. If you are wasting power in transmission, you are wasting coal—one of the articles the Government requests us to conserve.

It is not necessary to shut down your plant to install Chapman Bearings. They are interchangeable with self-oiling bearings of the same shaft size, and power is not the only thing they save.



Let Us Tell You More About Them

CHAPMAN DOUBLE BALL BEARING CO., Limited

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408 Shaughnessy Building, Montreal

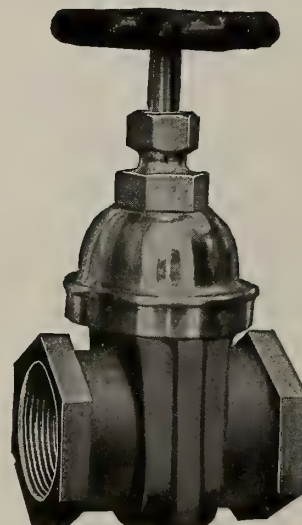
Transmission Ball Bearing Co., Inc.
1050 Military Road, Buffalo, N.Y.

MUELLER REDUCING AND REGULATING VALVES

The right kind of valve is one that is adapted to your particular service. Different services under different conditions necessitate different types of valves. Don't guess. Consult us. When **MUELLER** valves are installed under our supervision we fully warrant them to control the service for which they are recommended. We make valves for water, steam, gas, air, oil and ammonia.

H. Mueller Mfg. Co. Ltd.

SARNIA, CANADA



HERE IS A Brass Gate Valve

You will find it always made from High Grade Steam Metal and beautifully finished.

They are not made of one quality this year and another next. Always reliable and worth the price you pay.

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EASY TO FILE IT AND EASY TO FIND IT

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Write us for prices and further particulars.

The Orillia Furniture Company Limited
Orillia - Ontario

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No.	H.P.	Phase.	Speed.	Volts.	Cycles.	Starter.	Make.	Type.
1....	50	3	750	550	25	Yes	C.G.E.	
1....	60	3	750	550	25	Yes	Crocker Wheeler	
2....	50	3	750	220	25	Yes	Lincoln	
1....	25	3	750	220	25	Yes	Lincoln	
1....	25	3	750	220	25	Yes	C.G.E.	
1....	15	3	1500	220	25	Yes	T.H.E.	
1....	10	3	1500	220	25	Yes	T.H.E.	
2....	5	3	750	550	25		Westinghouse	CCL
2....	1/2	1	1500	110-220	25		Century & Wagner	
1....	1/2	1	1800	110	60		Fort Wayne	
1....	1/4	1	1800	110	60		Westinghouse	
1....	1/4	1	1800	110	60		Fisher	
1....	40	2	900	220	60	Yes	Fuller Wenstrom	
1....	15	2	1200	220	60	Yes	C.G.E.	
1....	10	2	Variable	220	60	No	Westinghouse.	
2....	10	2	1200	220	60	Yes	Westinghouse	CCL
1....	10	2	1800	220	60		T.H.E.	
1....	7 1/2	2	1200	220	60	Yes	Crocker Wheeler	
2....	5	2 or 3	1800	60			Westinghouse	CCL rewound
2....	5	2	1200	220	60	No	Westinghouse	C
3....	5	2	1800	220	60	No	Westinghouse	CCL
2....	1	2 or 3	1800	60	No		Westinghouse	CCL rewound
1....	1/2	2	1800	220	60	No	Westinghouse	CCL
2....	10	2 or 3	1200	60	No		Westinghouse	CCL rewound
1....	3	3	1200	220	60	No	Westinghouse	CCL
2....	3	3	1800	220	60	No	C.G.E.	rewound
1....	20	3	900	220	60	Yes	Lincoln	
4....	7 1/2	3	1800	220	60	Yes	Lincoln	

TRANSFORMERS

1....	40 K.W.	Type R60.	2200-220 volts.	Packard.
2....	75 K.W.	Type H.G. 60	1040-115 volts.	Canadian General Electric.
1....	40 K.W.	Type C.	2080-230 2200-220 volts.	Westinghouse.

Toronto and Hamilton Electric Co. Limited

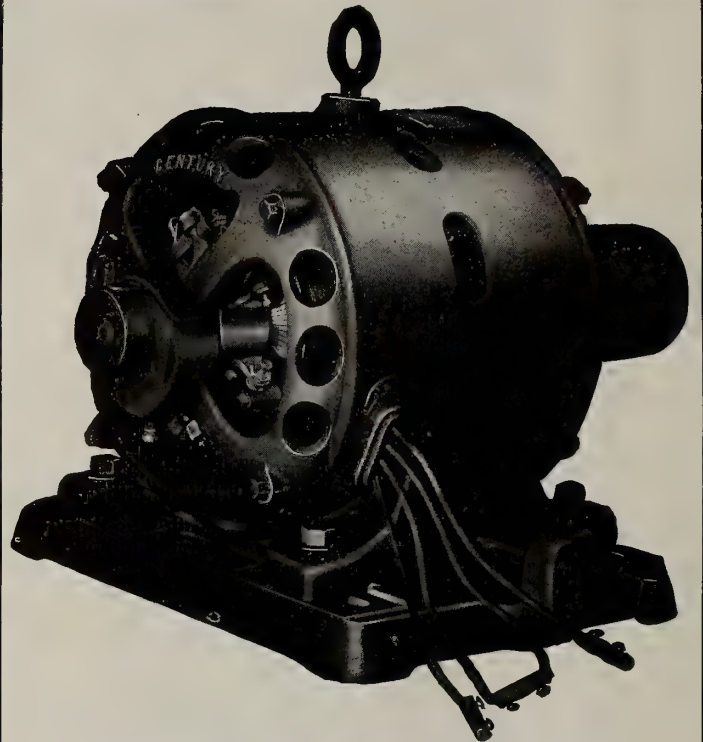
99-103 McNab St. North, Hamilton

Jones & Moore Electric Co.

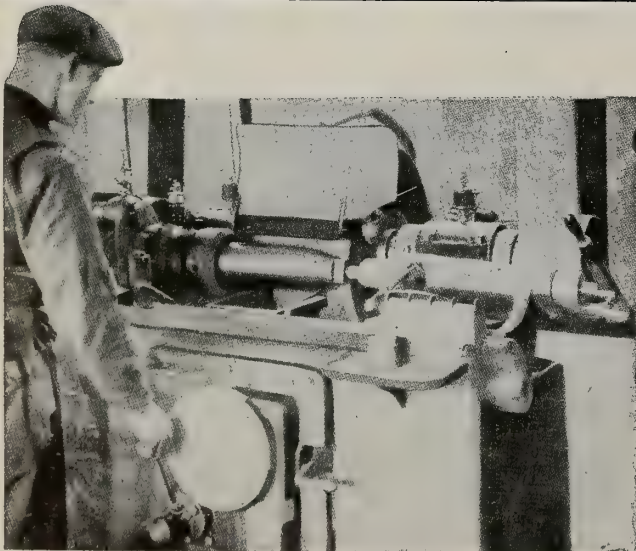
LIMITED

294-300 Adelaide St. W.

Toronto



MANUFACTURERS OF DYNAMOS AND MOTORS
REPAIRS PROMPTLY PERFORMED



Canadian Hart Wheels

are used with great success in grinding

SHRAPNEL AND HIGH EXPLOSIVE SHELLS

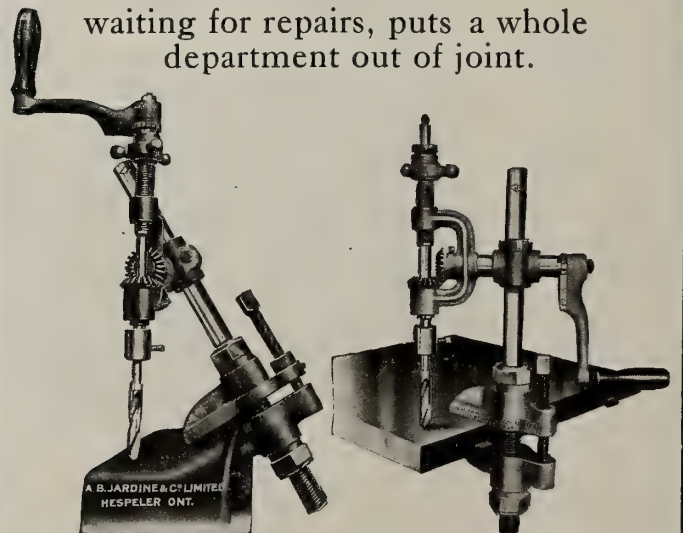
Canadian Hart Wheels cut faster and longer than any other grinding wheels. Put your grinding problems up to us.

Canadian Hart Wheels, Limited

Manufacturers of Grinding Wheels and Machinery
Hamilton - Canada

A Machine Standing Idle

waiting for repairs, puts a whole department out of joint.



Jardine Universal Ratchet Drill

Gets a hustle on the repair job.

Every factory should have one or more.

A. B. JARDINE & CO.

LIMITED

HESPELER, ONT.

Judge Your Printer by His Work as Your Salesman

HUNDREDS OF THOUSANDS will read this book from cover to cover, and the same customer will buy again and again from its pages.

Why?

Because it is designed, illustrated, written, and printed with an effectiveness that will most surely bring out the quality of the merchandise it offers.

To produce a book of this kind, successfully, edition after edition, a printing plant must be *big* not only in the sufficiency of its equipment, but also in its staff—big in its *printing efficiency*; big in its *advertising knowledge*; big in its *co-operative spirit*.



Showing four-color printing on cover (reduced) of the Robert Simpson Co. Fall and Winter Catalogue, printed in the Toronto plant of Southam Press Limited. There are 52 pages printed in four colors in this catalogue. Properly employed, color has immense sales value in all Direct Advertising.

And so with all forms of Direct Advertising. Your printer becomes your salesman. Judge his work by the same measure as you would judge a human salesman—RESULTS—and henceforward you will insist on quality printing.

We will be glad to talk with you on your printing requirements, present and future. Write, phone or call.

SOUTHAM PRESS LIMITED

CANADA'S LEADING PRINTING HOUSE

TORONTO

MONTREAL

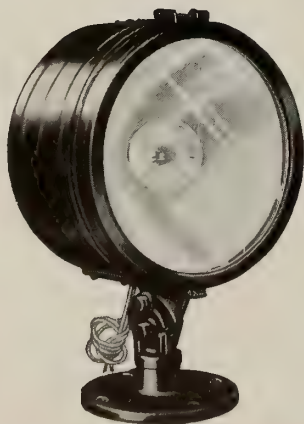
Protect Your Property

Illuminate Approaches and Surroundings
Night Prowlers Shun Plants Guarded by

IMPERIAL FLOOD LIGHT PROJECTORS



What Floodlighting
can do for you is told
in our Catalog No.303.
Write for your copy.



Imperial Flood Light
Projectors are made in
styles and sizes to meet
every requirement.



*Catalogs giving complete information on all Condulets
mailed Free upon request.*




Crouse-Hinds Company

OF CANADA, LIMITED

Toronto, Ontario, Canada



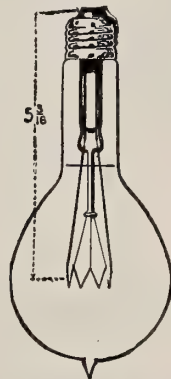


Reduction In Prices

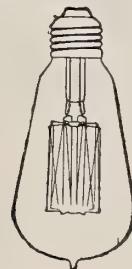
on all large style

Sunbeam and Edison MAZDA LAMPS
NOW EFFECTIVE

MAZDA — the most efficient
Tungsten Lamp made.



They retain their initial Candle
Power during their whole life.



All Mazda Tungsten Lamps of our manufacture are
guaranteed to give an average life of not less than
1000 hours, in accordance with Standard Specifications
issued by U.S. Government (Bureau of Standards).

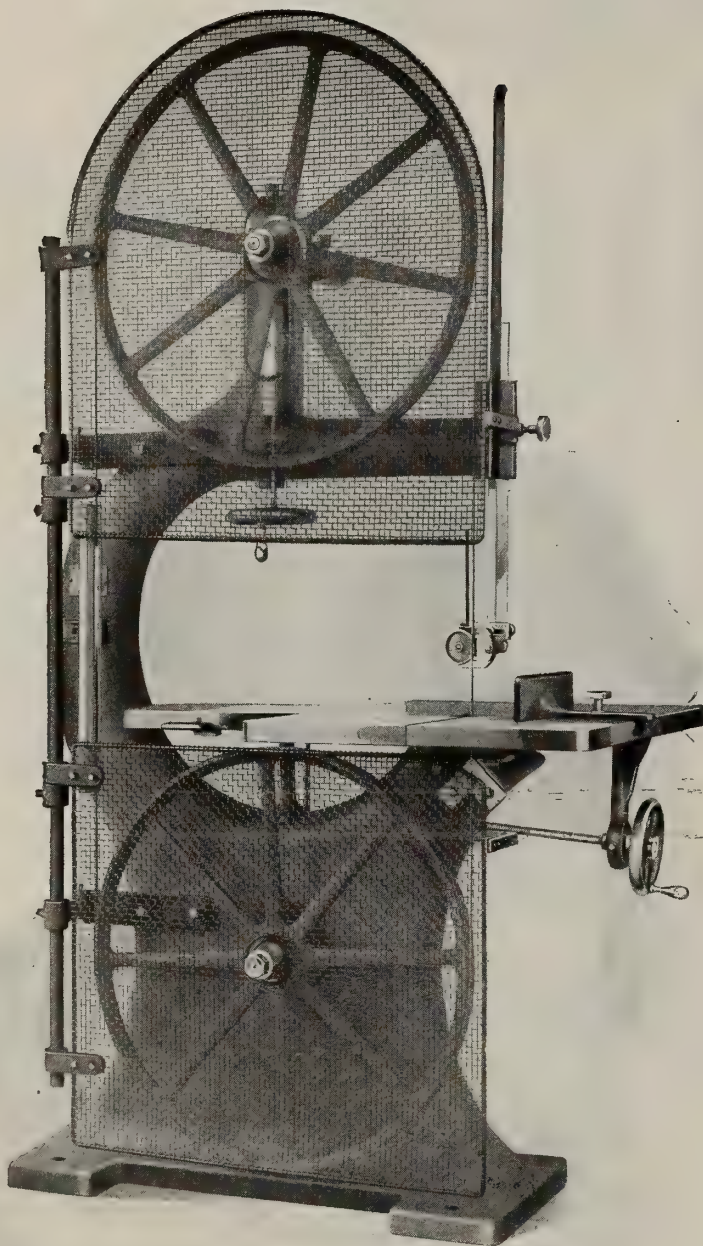
LONGER LIFE means POOR EFFICIENCY

Why not write us to-day for our proposition covering your year's requirements?

Our prices will interest you.

CANADIAN GENERAL ELECTRIC CO.
LIMITED

Head Office : Toronto. Sales Offices : Montreal, Quebec, Halifax, Sydney, Ottawa, Cobalt, South Porcupine, London
Winnipeg, Calgary, Edmonton, Nelson and Vancouver



PATTERN SHOP EQUIPMENT

*The illustration is of our
No. 714—36-inch Band Saw with
wire mesh guards.*

We manufacture a wide line of wood and iron working machine tools of the highest grade for use in the pattern shop, including:

Band Saws, Variety Saws, Surfacers, Buzz Planers, Wood Lathes, Pattern Makers' Lathes, Engine Lathes, Shapers, Vertical Drills, etc.

For sale direct and by all leading machinery dealers.

CANADA MACHINERY CORPORATION

LIMITED

Galt - - Ontario

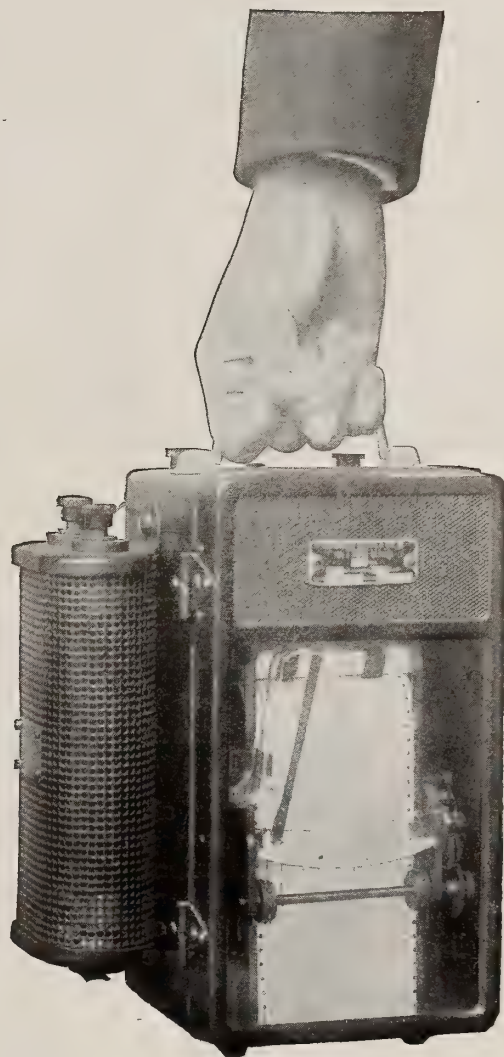
Toronto Office and Warerooms: BROCK AVE. SUBWAY

Westinghouse

Graphic Meters for Industrial Plants

Graphic Records are indispensable to industrial plants, as well as to central stations.

A more efficient operation of industrial motors, industrial heating apparatus, lighting systems, etc., can be obtained by examining continuous records of operation, by using Westinghouse Type U Graphic Meters, which quickly locate any deficiencies.



Type U, Portable Graphic Meter

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158 Portage Ave. E.

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Bank of Ottawa Bldg.

Made in Canada



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A Severe Test—A tile-surfaced Barrett Specification Roof being used as a Drill-Ground

Hundreds of marching feet—a regiment in action with a roof for its drill-ground—that's what you see above.

You couldn't use a roof much more severely than this.

And that's what happened almost daily for months on top of the big Altman Department Store in New York City, where several hundred members of the Home Defense League have learned to do their "bit."

Barrett Specification Roofs contain a larger amount of waterproofing and protective materials than any other roof-covering.

That is why they give such wonderful service.

And not only do they give longer service than any other type, but they *cost less per year of service.*

If you want this kind of a roof on your building, the way to

A copy of The Barrett 20-Year Specification with full information will be sent free on request: Address nearest office

make sure of getting it is to insert in your building plans the following:

"The roof shall be laid according to The Barrett Specification dated May 1, 1916, and the roofing contractor shall secure for me (or us) the 20-Year Guaranty Bond therein mentioned."

Only competent roofers can obtain the Bond, and the roof is constructed *under the supervision* of a Barrett inspector, who sees that the Specification is strictly followed.

20-Year Surety Bond

We now offer a 20-Year Surety Bond Guaranty on all Barrett Specification Roofs of fifty squares and over in all towns of 25,000 and over, and in smaller places where our Inspection Service is available.

Our only requirements are that The Barrett Specification of May 1, 1916, shall be strictly followed, and that the roofing contractor shall be approved by us.

Barrett Specification Waterproofing

The foundation of this huge structure is also kept dry with a great seal consisting of alternate layers of Specification Pitch and Felt. This is the standard type of waterproofing for all important underground construction.

Below is the Bond that guarantees your roof for 20 years.

The **Barrett** Company
LIMITED

MONTREAL TORONTO WINNIPEG VANCOUVER
ST. JOHN, N.B. HALIFAX, N.S. SYDNEY, N.S.

INDUSTRIAL CANADA

ISSUED BY

The CANADIAN MANUFACTURERS ASSOCIATION.

INCORPORATED.

Vol. XIX.

TORONTO, OCTOBER, 1918

No. 6

INDUSTRIAL CANADA

Issued monthly as the official publication of the Canadian Manufacturers Association (incorporated), and devoted to the advancement of the industrial and commercial prosperity of Canada.

SUBSCRIPTION

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Advertising Rates made known on application

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On Discharging Men

IT is a serious thing to discharge a man in any case but when the discharging is done while "the boss" is in a fit of temper a positive injustice may be the result. Sometimes, of course, it only leads the man ultimately into a more congenial position, better befitting his talents, but it always for the time causes more or less deep mortification.

A foreman once came to the manager and said: "I want your permission to discharge that man right away." The manager, noticing that the man was angry, said, "Cool off before you do anything. Come back to-morrow and see me. If you wish him discharged then, you have my permission."

The next day, the foreman came back to the office and the manager asked him what he had decided to do. "He said all that I said he did," was the reply, "but it was more of a misunderstanding than a disobedience of orders. We talked it out and I see how it was."

That is a good rule for every man in authority—wait until you cool off. Don't take a step when you are angry

that may harm another man. In such a state of mind, it is impossible to think correctly, and any view you might take of a case would perhaps be distorted. Nothing is lost by waiting a while and cooling off before taking action.

War Time Economy

MANY items which formerly passed unnoticed as trade charges by our business houses, to-day call for careful scrutiny, because of the rapid increase of overhead expenses.

One such item in especial which has grown out of our former loose business habits has been referred to by one of our members. It is the item represented by the presenting of cigars, etc., to customers by travelling salesmen. In pre-war times, business houses did not give much thought to the matter, as the majority of salesmen and commercial houses considered it more or less a business necessity, but in these war times, the habit cannot be regarded as very patriotic either on the part of the retail merchants who look for or of the salesmen who hand out these gifts.

A member states that with the staff of salesmen his firm employ, in an ordinary short season from now to Christmas, this item amounts to \$1,000, and it is safe to say that if the total cost of this useless perquisite were ascertained, it would reach a very large sum, which had better be saved or applied to national or patriotic uses. Business houses might do well to take the matter up with their salesmen.

An Inconvenient Custom

OUR attention has been drawn to a custom which is altogether too prevalent among Canadian merchants, who are accustomed to give notes in payment of various accounts. They will persistently ignore their notes when these come up for payment and will, instead, send their cheques direct to the manufacturer or supplier. This has the effect of duplicating work, whereas the simple act of the merchant of handing his cheque to his banker in exchange for the note would save time and trouble to all parties—the manufacturer, the merchant and the banker. A little educational work along these lines would be advantageous.

Industrial Housing

THE Ontario Housing Company has made a good beginning by recommending standards for industrial houses. The report has not yet been considered by the Government, but the minimum standard must be one of the foundations of a sound housing policy. Each municipality should be free to choose its own designs, but these should be subject to the approval of the provincial authorities, in order that the official regulations may be imposed uniformly throughout Ontario. Houses conforming to the standards recommended by the Committee could be built for \$2,500 and upwards, according to the number of rooms. Ventilation, room-space, height of ceilings, stairways, cellars, plumbing, heating, lighting, fencing and all details of house planning are provided for, and the quality of materials for interiors and exteriors is plainly specified.

As to land requirements, it is suggested that in outside areas, in no case should the size of the lot be less than 1,600 square feet, though a much larger space is desirable. The standards recommended are only minimum, but if followed, they will insure comfortable and healthful living conditions. Jerry-building should be stopped at once.

Nothing is more lamentable than the manner in which some of the suburban districts of our cities are mutilated by the complete absence of planning rules of any kind. On some of our municipal borders in Toronto, the condition is already becoming intolerable, creating problems which must be faced in the coming years only by a large expenditure of money and effort. In this connection, the Government should have acted long ago.

The financial problem is another side of the question. Private capital is too intent on larger profits to concern itself with industrial housing for the workers, except in rare instances. If municipal money is used, municipal tax payers must make up the difference between the return their money would bring in this undertaking and what other classes of investment would yield. Formidable difficulties undoubtedly present themselves, particularly in cities in which land speculation has erected a wall against the builder and the house-seeker. No solution will be adequate which ignores the need of exercising the taxing power to bring idle land into productive use.

Peat Fuel Development

DURING the past spring it was found that the Dominion Government and the Ontario Government were pursuing investigations into the production of peat for fuel along similar lines. They therefore decided to join forces, and for this purpose a joint Committee was appointed, two members representing each Government. R. A. Ross, electrical engineer, Montreal, and B. F. Haanel, Mines Branch, Ottawa, were appointed to represent the Dominion Government, and R. A. Harris, Toronto, and Arthur A. Cole, mining engineer of the T. & N. O. Railway, chairman, to represent the Ontario Government. Both

Governments made ample financial arrangements to meet jointly the expenses of this Committee.

The Committee engaged Mr. E. V. Moore as their engineer. Two plants were then designed, one following closely the Anrep plant, which had already been tried out on the Alfred Bog, and a second plant, designed by Mr. Moore, which embodies certain of his ideas regarding the handling of the material on the bog. The contract for building these two plants was let to the William Hamilton Company of Peterborough, Ontario.

The principle on which the peat will be handled will be that which was followed previously in the government work on the Alfred Bog, namely, mechanical excavation and maceration and spreading on the surface of the bog, the drying being accomplished by sun and wind. After a maximum of thirty days of this drying, the peat fuel is ready for harvesting. As this method depends entirely on natural drying, the season available is only from 100 to 120 days in the year. With all machinery manufacturing so extremely difficult of delivery at the present time, it was known to be impossible to produce any fuel for this winter's consumption, but it is nevertheless hoped that the plants will be assembled in time this fall to make a demonstration so as to try them out, and any defects that are shown can then be rectified in plenty of time to be ready for a complete season's run in 1919. It is known that a satisfactory fuel can be produced by this method, but the work of the committee is to demonstrate beyond question the feasibility of producing this fuel on a commercial basis.

The engineers anticipate that when the two plants are in full operation, they will be capable of producing 20,000 tons in the season, which will form a very substantial fuel contribution towards domestic use. The fuel itself is easily handled and is clean.

Don't Hide Behind a Service Flag

A FINE patriotic spirit, which might well be emulated by the business men of Canada, is shown by the Hon. George Wharton Pepper of Philadelphia when he says:

"I want to protest against a spirit . . . which leads a father to think of his son in the service as his personal contribution to the cause. . . . When the young men of my household first responded to the call to the colors I had something of the feeling myself. I began to think myself some patriot and I swelled out my chest, and I nearly bought me a service flag. Then suddenly it came over me that the man who takes his patriotism in the right of his children is a little bit like the man that we all know who records his religion in the name of his wife. And I made a resolution that if I was to be a patriot it should be by virtue of something I had done myself and not something that was done by my three young men, and I recorded a solemn resolution with myself not to hang out a service flag until I should have given to my children the right to display some similar emblem to show that the old

man himself was making some contribution toward the winning of the war.

"My town is full of people who are conscious of superior capacity to fill the job of President of the United States, of Secretary of the Treasury, and of the Food Administrator. My friends, if there are any such within the sound of my voice, I appeal to you, at least for the period of the war, to lay aside your unrecognized greatness and take orders from those whom we have selected to give us orders in the time of emergency. When the war is over you will come into your own. No doubt a grateful Republic will recognize you and give you the tribute of respect you are entitled to. But for the time being for God's sake go along with the Government and do the things that are prescribed for us to do. And first among them is to obey the orders of the Food Administration. I mean obey them, and obey them literally and religiously.

"I can be enthusiastic in talking about the intelligence and patriotism of Mr. Hoover, but I do not put the thing on that ground. In conformity with what I said at the opening, I appeal to you to live the ordered life of a self-imposed ration, because your boys and mine are leading that life. They are eating what they are told to eat. They are doing what they are told to do, without opportunity to recalcitrate or kick, and we are told that it is no less important that you and I should do the same thing. I appeal to your fair play and sense of honor that you put yourself upon the same footing as those who are giving their all that you and I may live in safety and freedom."

Save the Small Things

THERE is a big Thrift Urge now under way in Canada. It is based on the knowledge that earnings are high and may some day be lower, that people are not giving due thought to the rainy day ahead, and that Canadians must be taught to save systematically and earnestly since the country is now dependent upon popular savings to finance the war.

The campaign for Thrift is essentially a campaign against waste. It is surprising to realize the amount of waste there is in the ordinary business office—stationery, typewriter supplies, string for wrapping packages and the hundred and one things which every office must have. If every employee of a large department store or manufacturing establishment were to waste but five cents worth of paper and twine a day, in the aggregate the waste would be a considerable item.

A Y.M.C.A. secretary has sent to his employees the following directions for eliminating waste:

The increased cost of operating this Association has made it imperative that we inject more efficiency into the handling of this department of our work, and we would suggest the following economics to be put into effect. While these may seem small or hardly worth while, yet they will have considerable bearing upon the increased efficiency of our Association, upon the men, as well as ourselves. All circular letters coming to the Association

will be used as second sheets for the typewriter, as well as all letters that have no value—this means will cut down our filing system and furnish all second sheets necessary for our correspondence. All envelopes coming to the Association that have not been sealed should be retained for service and used in place of our own or Penna. envelopes for various notes, memos and receptacles for cashiers' reports.

Save all string, cord and twine from packages for use, as no string will be purchased in future.

Use clipless paper fastener and discontinue the use of clips and pins except in necessary cases.

In case of doubt weigh all letters before posting—this will save many stamps.

Use special delivery stamps only after you are convinced that service secured will be worth difference.

Think far enough ahead to use mail instead of telegraph or telephone.

Use care in giving out correspondence paper and envelopes—give the men all they want but no more.

Office employees will not use stationery for notes and memos under any circumstances.

Secure all blotters—large and small—in future, both for correspondence table and desks, from various firms who supply same gratis, as there are many firms glad to supply them.

Use advertising penholders on correspondence tables as well as desks.

Provide yourself with a fountain pen—it saves ink and increases your efficiency.

Use rubber bands sparingly.

The fronts of envelopes make excellent scratch paper.

All waste paper and old magazines that are not resold should be placed in paper baler.

Do not keep the match and toothpick holders filled up—keep a few in all the time.

Be sure to use check perforator on each check.

Solving Labor Difficulties at Home

THERE are many and divergent views on the question of getting the employer and the employed closer together in Canada. There are a few who think that the adoption of a compulsory arbitration scheme formulated and insisted upon by the government will prove to be the correct solution. In fact, a regular drive is being made in that direction by a few individuals, backed up in some cases by occasional artillery fire from one or two newspaper offices. These well meaning friends, unfortunately, are convinced that labor organizations and employers can be made to experience a change of heart and become very, very good by legislation. Moreover, the legislation they propose will only begin to act after either one party or the other, or both have been quite naughty, giving forth dire threats of lock-out.

This whole movement begins at the wrong end. The experience of Australia, a country much less devoted to industrial pursuits than Canada, where there are, in effect,

compulsory arbitration acts, shows how pitifully such attempts fail in securing industrial peace. In normal times strikes are constantly occurring, often in direct violation of a previous award, and labor troubles of all kinds are of more frequent occurrence and of a much more rancorous nature than any in the experience of Canada.

In certain of the States to the south of us, arbitration boards have been set up. True, the submittal of the questions in dispute is not compulsory, but by means of the machinery provided by the Acts to enable the boards to hear about disputes it practically comes to compulsion. The Board is compelled to act if the matter is brought to its notice and legal notice can be given by the employees, the employers or the chief executive of the municipality in which the trouble is brewing. This simply means that either one party or the other has got out of hand before the Board hears about the question, and conciliation is practically out of the question owing to the inflamed state of the contesting parties. The only recourse then is arbitration with all its bad features, the principle of which is that it lays down hard and fast rules or equally binding wage scales while the conditions in the industry are constantly changing.

In Great Britain, the ruling tendency is evidenced by the character of the Whitley Report, the principles of which have been adopted by the Government and promulgated for the guidance of the employers and the employed. It provides a form of organization by which appointees of representative employers' associations and representative unions may organize what are called Joint Standing Industrial Councils whose objects will be to secure a permanent improvement in the relations between employers and workmen and systematically to review all industrial conditions affecting the relations between employers and workmen.

Provision is also made for the organization of district councils and works committees which will co-operate and form a chain of continuity with the National Councils.

These suggestions are admittedly only applicable to trades that are well and representatively organized both as employers and workmen.

It is also to be thoroughly understood that the organizations are efforts of purely voluntary co-operation between the representative employers' associations and workmen's organizations.

The Government is prepared to send representatives to preliminary organization meetings, in an advisory capacity, but retains the right of overriding all organizations and especially where programmes may be adopted which the Government considers are not in the best interests of the State.

These plans have already come into force in a number of industries and further evidence is forthcoming that indicate that they may meet with a considerable measure of success in a highly-organized, self-contained industrial region like the British Isles.

The Report also has the merit of going to the root of the matter in providing for the coming together of the

individual employer and his workmen. It is in this feature that great hopes lie for Canada.

Every plan that has been referred to above and many other local variants have their supporters in this country, but a quiet survey of industrial conditions, taking into consideration the variations in cost, manner and standards of living and many lesser features in the widely separated industrial communities should give pause to the enthusiast for some great, all-embracing national scheme. Many great things begin at home. It will be found that the solution of labor difficulties can be discovered at the home of the individual industry, provided the real spirit of co-operation can be engendered.

Better Rail Facilities Are Urged

A STRONG plea is voiced by the *Halifax Chronicle* for the immediate double-tracking of the Canadian Government Railway from Halifax to Moncton. This line resembles the neck of a bottle, so far at least as the shipping of Canadian products through the port of Halifax is concerned. From Upper Canada to Moncton there are three routes over which freight may be despatched, the old Intercolonial route, the new National Transcontinental Route and the C.P.R. short line via St. John. As soon, however, as Moncton is reached, all three roads converge into the single-track line which completes the run to the Atlantic Ocean at Halifax.

"The port of Halifax," declares the *Chronicle*, "is one of the most important ports of the world in time of war. It will be of equal importance for some years after the war. These facts and the uses to which it has been put—what has been accomplished and what has still to be accomplished—are well and widely known. All the outgoing and the incoming overseas traffic via Halifax amounting to millions of tons is handled by the Canadian Government Railway over 186 miles of single track—excepting 21 miles, between Halifax and Moncton. There have been delays of course, but on the whole the marvel is that the railway, having regard to this handicap, has done so well. With a double track three times as much traffic could be handled. The C.G.R. should be double-tracked from Halifax to Moncton as a war measure.

"Jutting far out into the North Atlantic, Halifax was designed by nature to be the entrepot to North America. The whole hinterland of Canada and of the United States can be served from overseas via Halifax more quickly and to better advantage than through any other port and *vice versa*. Time and time again has this been demonstrated. The facts are easy to be understood. Halifax is nearer Great Britain and France, Panama and South American ports than New York. A train travels more miles in a given time than a steamer. In these days of war, roughly, four steamers sailing from Halifax can carry as many troops or as much freight to or from Europe in a given time as six steamers of the same size and speed sailing from New York.

"Tonnage is scarce, time is precious, more use should be made of the port of Halifax. The C.G.R. is taxed

to its utmost capacity. That capacity should be increased. It can readily be increased by double-tracking the 165 miles between Moncton and Halifax. It should be done, and done at once. It is of incalculable importance to Canada, to the United States and to the other Allied nations, that tonnage be saved and expedition be assured in the transport of freight and troops.

INDUSTRIAL CANADA is inclined to agree that something should be done at once, if this route is inadequate to handle the business entrusted to it with sufficient despatch, to rectify the deficiency.

Alloy Steels Show Big Possibilities

STEEL has been the basis of our civilization for more than half a century, but it is only within recent years that chemists have seen the great possibilities in the so-called alloy steels. An alloy is a mixture of two or more metals, and, strangely enough, often has properties of hardness and toughness which are possessed by none of the ingredients, Dr. Raymond D. Cooke, a member of the American Chemical Society, tells us. Plain steel is in one sense an alloy because it contains small amounts of carbon and manganese, but the usual meaning of the term alloy steel is one to which nickel, chromium, vanadium or other of the rarer metals have been added.

The advent of high-speed tools several years ago has completely revolutionized machine shop practice and made possible many times greater production from the same number of machines. It is safe to say that our present production of war materials would be utterly impossible with the older tool steels. Most of the high speed tools contain approximately 16 per cent. tungsten with smaller quantities of chromium and vanadium. Such a steel then has the property of keeping its hardness without losing its edge even at red heat and so may be used for deep cuts at high speed.

Vanadium steel is much used for axles and frames of automobiles, where great strength and lightness is desired. A recent addition to the list is high silicon steel which is proof against attack by even the strongest acid. This has been a great saving to the chemical manufacturer, who formerly had to use glass and stoneware apparatus wherever acids were being handled.

The story of how some of these new alloys were found is as full of romance as any of the pages in history. They have been discovered through painstaking research and many disappointments and sometimes through accident. No one can predict what a certain combination will be like until he has tried it. New alloys with new properties are constantly being made, and the large staff of scientists employed by the Government are responsible for no small part of it.

Their attention is now directed entirely to war applications. They have given us new steels for armor plate, helmets, projectiles, and several other important uses. The possibilities of the future can not even be guessed; our laboratories may discover alloys with new and unheard of properties (like the acid proof steel) which will open up quite new lines of industry and make possible the invention of mechanical and electrical devices which are undreamed of to-day.

WHEN referring last month to the desirability of changing back to standard time from daylight saving time on Sunday, October 27, instead of Thursday, October 31, the statement was made that "it is only two hundred years since we changed (the calendar) and skipped eleven days to correct an error in Pope Gregory's calculations." This was obviously a slip, the eleven-day error existing in the Julian calendar, not in the Gregorian calendar, which superseded it.



A Canadian-Built Steel Freighter as She Appears at Sea

This is the "War Wizard," a 3,000-ton ship built by the Collingwood Shipbuilding Co. and recently launched by them

News and Views of the Association

THERE will be found each month in this department a record of the various activities of the Canadian Manufacturers Association during the preceding month. The information is supplied to INDUSTRIAL CANADA officially, and all members of the Association are urged to acquire the habit of reading and checking over the contents of the department carefully in order to keep themselves posted on the work of the Association.

Executive Council Meeting

The President of the Association, Mr. W. J. Bulman, Winnipeg, came east to attend the September meeting of the Executive Council, which was held in the Association's offices, on the 26th ult. There was an excellent attendance of members of the Council and a good deal of important business was transacted. At the close of the meeting Mr. Thomas Roden, on behalf of the members, thanked the President for this his first attendance at the ordinary meetings of the Executive Council, and bespoke the cordial support of the members during his tenure of office. The President then thanked the meeting for the expression of its appreciation.

New Members of Executive Committee

Hon. E. J. Davis of Newmarket and Mr. W. H. Shapley of Toronto have been elected for a three-year term to the Executive Committee of the Association. According to the by-laws, vacancies on the committee are required to be filled by the September meeting of the Executive Council. The term of Messrs. Bertram and McKinnon having expired and they not being eligible for re-election, the two gentlemen mentioned were elected in their stead. Mr. McKinnon, as second vice-president of the Association, continues to act on the Committee as an ex-officio member.

Trade Sections

Application was received by the Membership Committee from the manufacturers of agricultural implements for permission to incorporate a trade section to be known as the Agricultural Implement Section. The application was granted.

Upon application the name of the Tanners' Section was authorized to be changed to the "Tanners' Association of Canada Section of the Canadian Manufacturers Association."

New Local Section

An application for permission to incorporate as a local branch, was received by the Membership Committee from the manufacturers of the city of Niagara Falls, town of Chippewa and township of Stamford, the branch to be known as the Niagara Falls Branch of the Canadian Manufacturers' Association. The application was granted after the committee had satisfied themselves that the new

branch would be representative of its respective trades, and that its by-laws were in general conformity with the by-laws of the Association.

Organization of Sections

The Membership Committee has recommended that a campaign on a moderate scale should be directed towards the organization of local branches in places not already served, and another circular will be issued to selected members in different localities drawing attention to the experiences of the new Niagara Falls branch, and offering the attendance of members of the staff where specially required. The Niagara Falls branch, according to a report received from its secretary, has been of considerable benefit already to manufacturers in that section. Prompt action on the part of the Branch resulted in embarrassing restrictions being quickly lifted.

Conference With Agricultural Representatives

The proposed conference between the manufacturers and representatives of western agricultural interests will be delayed until both parties have had an opportunity to give the problems involved fuller consideration. In the meantime there will be a visit of the agricultural representatives to the east. President Bulman stated at the Executive Council meeting that the agricultural interests representatives had expressed themselves as favorable first to a preliminary conference, to be followed by a further conference in Toronto, to give all parties time to consider the more important features of our fiscal questions. Mr. S. R. Parsons agreed with the view that postponement would be favorable to the situation rather than approaching the matter at the present time. The longer the delay, the better prospect there would be of ultimate agreement.

Pig Iron Committee Extends Its Scope

At the September meeting of the Executive Council, a motion was passed extending the area covered by the special committee on pig iron and iron and steel to embrace all sections of the Dominion. Major Anthes referred to the serious effect of the ever increasing scarcity of raw material upon Canadian pig iron and steel industries through enforcement of embargoes and commandeering of Canadian pig iron and steel by the Government, for war purposes. A meeting of pig iron and steel users had been

held and a resolution was passed calling upon the War Trade Board for a conference which it was expected would shortly take place. It appeared that the situation called for more comprehensive action on the part of manufacturers. The committee consists of L. L. Anthes, Anthes Foundry Limited, Toronto; A. F. Hatch, Canada Steel Goods Co., Limited, Hamilton; H. H. Biggert, International Harvester Co., Limited, Hamilton; C. G. McGhie, Welland Vale Mfg. Co., Limited, St. Catharines.

Labor Board of Appeal

The Minister of Labor has appointed Hon. Justice F. S. MacLennan, of Montreal, Chairman of the Labor Board of Appeal, which has been constituted for the purpose of reviewing the findings of Boards of Conciliation. The other members of the Board are S. R. Parsons, of Toronto; G. H. Duggan, of Montreal, representing the Canadian Manufacturers Association, and John W. Bruce and Gustave Francq, of Montreal, representing Labor.

Bulk Sales Act

The Legislation Committee, reporting to the Executive Council, expresses the view that the best disposition of the bulk sales question would be through an amendment to the proposed Federal Bankruptcy Bill. This bill, which will come before the House of Commons when Parliament assembles, deals with the subject of bulk sales, and by a slight amendment of that bill, bulk sales could be placed in the category of transactions subject to bankruptcy proceedings, and thus render unnecessary any provincial legislation on the subject. The question of bulk sales has been referred by the Canadian Bar Association to a committee on uniformity of laws with a view to drafting a model Act which would be adopted by all the provinces. It was found by members of the Association that in some of the provinces, particularly Quebec, there were defects in the Act that militated against its successful operation.

Nova Scotia Workmen's Compensation

At the last session of the Nova Scotia Legislature, it was intimated that the Maritime Branch would have an opportunity of reviewing the Workmen's Compensation Act of that province with the Law Committee of the Legislature before the next session. In preparation for this the Legislation Committee has had Mr. Wegenast draft a memorandum of amendments, based on the new act of New Brunswick, and these have been transmitted to the Secretary of the Maritime Branch.

Ontario Workmen's Compensation Act

At its meeting on September 26, the Executive Committee recommended that the report of the Legislation Committee, which was referred by the annual general meeting of the Association to the Executive Committee, be sent back to the Legislation Committee with instructions to prepare the necessary amending legislation providing for the audit of accounts of the Ontario Workmen's Compensation Board; requiring that Board to show cause with respect to the scales of rating; giving employers power to present their claims before the Board; and providing for some form of adequate appeal tribunal.

It is proper that employers and their associations should have the opportunity of checking and verifying the disposition of the funds, whether these funds are regarded as being only in trust for the employers or for the public. The administration of the funds is not under any such

supervision as is given to other public funds in the Public Accounts Committee of the Legislature, where the smallest items are the subject of public discussion and criticism. It is more important for this reason that accounts should be subject to check on behalf of the employers who are the only persons vitally interested. Municipal taxes and every other type of taxes in this country are subject to some form of public check. The assessments of the Ontario Workmen's Compensation Board are the only example we have of taxation without representation.

The Executive Committee also recommend for consideration the effect of the Act in securing compensation for employees whose employers have not paid their assessment. As the Act now stands, any default in payment of assessment by one employer must be made up by the other employers of the class. By reckoning on the basis of claims allowed to employees of non-paying employers, it is possible to estimate the amount of assessments annually defaulted or lost. No statistics on the point are given in the Board's annual report, but it is understood that the amount is a very large one according to the Board's own computations. A similar condition exists in Nova Scotia, and it was a recognition of these conditions in the two provinces which actuated the drafting commissioners in New Brunswick in making adequate provision for their prevention in that province.

Uniformity of Commercial Law

The Legislation Committee is keeping in close touch with the work of the Inter-provincial Commission on Uniformity of Laws. This commission, which was formed on the initiative of the Canadian Bar Association with a view to securing a standardization of commercial laws throughout the various provinces of the Dominion, consists of representatives of the governments of the different provinces. Ontario, British Columbia, Manitoba, New Brunswick and Prince Edward Island have already appointed representatives, and the rest of the provinces are expected to follow suit. The work of analyzing certain branches of commercial law with a view to drafting statutes for uniform adoption has been begun and the Legislation Committee of the C. M. A. hopes to be in a position, from time to time, to make practical suggestions, which will not only be of assistance to the Commission but of special benefit to the Association.

Officers Are Congratulated

The Insurance Committee of the Association have conveyed to Mr. Arthur Hewitt, president; Mr. H. J. Waddie, first vice-president, and Mr. F. Cockshutt, member of the executive committee of the new Ontario Fire Prevention League, an expression of their gratification at their appointment with the hope that they will urge upon the Government the adoption of vigorous means to restrict our fire loss and that to this end suitable legislation should be introduced at the ensuing session of the Provincial Legislature.

The Coal Supply

On September 9, the Fuel Committee were notified by the Fuel Controller that the industrial coal supply for Canada had been reduced by 1,300,000 tons below that of the past coal year and that the railways had been communicated with to ascertain to what extent their consumption could be reduced so as to take up a large portion of this shortage, and that this action had met with considerable success. Notwithstanding this, he said, there was still a large tonnage shortage to be conserved, and there

was no option but to follow the same policy as that laid down in the United States—namely, to restrict the coal supply to such selected industries as investigation has revealed can best reduce their output with the least detrimental effects on the community. The industries affected are the following:

Pottery
Fire Clay
Brick
Sewer pipe and drain tile
Sand lime brick
Cement
Phonographs
Musical Instrument Materials

Musical Instruments
Stone
Automobiles
Automobile Accessories
Enamelware
Window glass
Liquors

All interested members (over two hundred) were duly advised of the above, and asked to meet in Ottawa on the 19th and 20th insts., to confer jointly or in groups for the purpose of determining what representations should be made to the Fuel Controller. Twenty-two representatives of the different industries attended. After discussing the matter generally with the Fuel Controller it was decided that the different groups should report separately to the Fuel Controller at the earliest possible date.

The piano manufacturers submitted their case on the morning of the 20th. The clay products and crushed stone interests have since submitted substantial reasons why there should be no curtailment of their present needs. It was pointed out to the Fuel Controller that in the United States, where it was found necessary to reduce the supply, the years 1915, 1916 and 1917, were used in determining the allotment and that we would be willing to be put on a similar basis using the years 1911, 1912 and 1913, these years corresponding with the three pre-war years of the United States.

The submissions which have been filled indicate that in so far as the industries mentioned are concerned, it will be impossible to further reduce the consumption. The manufacturers of clay products show that during the past three years reductions in coal consumed amounted to 37 per cent., 79.4 per cent. and 54 per cent., respectively.

With regard to piano and organ manufacturers, their requirements are considerably less than 20,000 tons.

No representations were made on behalf of other manufacturers mentioned, except cement, and the Fuel Committee were advised by the Fuel Controller that he was in direct communication with the manufacturers of this commodity.

In conclusion the Fuel Controller strongly advised that the manufacturers representing the different interests affected should visit Washington with him for the purpose

of discussing the whole situation with the Fuel Administration there. The piano and organ manufacturers have delegated Mr. R. S. Gourlay to represent them. Mr. Magrath will communicate with the Fuel Committee before definitely arranging for the proposed conference.

Services of Insurance Department

At the conference of branch secretaries held last June, a recommendation was submitted that the facilities accorded by the Insurance Department in Ontario and Quebec should be extended to members in the more distant parts of Canada. It may be fitting to state that the services which our Insurance Department can give to members include the examination of policies, suggestions for the most favorable and liberal form of contract, confidential

advice regarding the strength and reputation of insurance companies and generally any information and advice which can be given through the mails.

It is manifestly impossible for the Insurance Department to give to members in the Maritime and Western Provinces so complete a personal service as can be accorded to members in Ontario and Quebec. Even in these two provinces some limit must be placed on their services, otherwise they would be in the position of spending more on salaries and travelling expenses than they received in commissions. In every case where the Insurance Department think they can be of service, they gladly send their representative any reasonable distance. In such case, if the Department are able to be of material assistance to the member concerned, it is not unreasonable to expect that he should give to the Department at least a share of his insurance. In a number of cases apparently members think that the Insurance Department receive remuneration from the Association for the services, and that therefore they are entitled to use the facilities of the Department without being under any obligation whatever.

Branch secretaries have been requested by the Insurance Committee to make a canvass of their members to ascertain:—

(1) What the consensus of opinion is in regard to their insurance affairs and what number would be prepared to support an Insurance Department.

(2) What number would permit their insurance to be placed with independent or unlicensed companies, provided better rates could be secured than are now paid.

(3) What number of members, who are now satisfied with their present rates, would desire an independent inspection service on the payment of a reasonable fee.

TEN WAYS TO KILL AN ASSOCIATION

- 1. Miss as many meetings as you can.***
- 2. If you do attend, don't come on time, but late.***
- 3. If the weather is fine, don't think of going.***
- 4. If you attend, be sure and find fault with the work of officers and other members.***
- 5. Decline all offices, as it's easier to criticize than to do things.***
- 6. Get sore if you are not put on a committee, or if appointed don't attend meetings.***
- 7. If Chair asks for your opinion, tell him that you have none, but later tell others what should have been done.***
- 8. Do nothing except that absolutely necessary, and when others roll up their sleeves to help matters, howl because of the clique running things.***
- 9. Delay your dues as long as you can, and delay answering all letters.***
- 10. Don't bother about getting new members, and "Let George do it."***

Labor Problems

At its September meeting the Executive Council was informed by Major Anthes, chairman of the Toronto Branch, that Toronto manufacturers, who are members of the Association, had formed a representative committee among themselves to deal with labor questions and problems, the intention being to consider mainly the problems that are likely to arise after the war. While there is a great scarcity of labor now, they believe that after the war the situation will go to the opposite extreme and it is considered imperative that this phase of labor conditions be dealt with, keeping primarily in mind the duty of employers to afford employment to returned soldiers. In this respect, it was evident that little could be done without the whole-hearted co-operation of the Government, the manufacturers, labor organizations, bankers, transportation agents and educational authorities. The committee has already offered its co-operation to the Labor Sub-committee of the Reconstruction and Development Committee of the Dominion Government, and the Government's committee will, through Mr. F. J. Daly, be in constant touch with the manufacturers, so that the Government may have the benefit of their advice and suggestions upon all matters which may be of common interest.

The following Committee was accordingly appointed for the purposes specified,—

L. L. Anthes (Chairman)	Anthes Foundry Co., Ltd.	64 Jefferson Ave.
F. J. Slegt	Willys-Overland Co., Ltd.	Weston Road
Geo. Valentine	Massey-Harris Co., Ltd.	915 King W.
H. J. Daly	United Brass & Lead, Ltd.	284 St. Helen's
R. L. McIntyre	McGregor & McIntyre, Ltd.	1139 Shaw St.
H. Banfield	W. H. Banfield & Sons, Ltd.	372 Pape Ave.
C. E. Edmonds	Christie Brown Co., Ltd.	202 King E.
John F. Morley	Standard Woollen Mills Co., Ltd.	237 Front E.
Atwell Fleming	Atwell Fleming Printing Co., Ltd.	11 Duncan St.
P. C. Brooks	Can. Fairbanks-Morse Co., Ltd.	26 Front W.
R. S. Gourlay	Gourlay, Winter & Leeming, Ltd.	188 Yonge St.
John Firstbrook	Firstbrook Bros., Ltd.	283 King E.
John Ince	Toronto Hardware Mfg. Co., Ltd.	402 Dufferin
Sam Harris	Harris Lithographing Co., Ltd.	125 Sterling Rd.
W. C. Coulter	Booth-Coulter Copper & Brass	115 Sumach St.
G. Frank Beer		156 King Street West.
H. N. Cowan	Cowan Co., Ltd.	72 Sterling Rd.
C. S. Corson	Regal Shoe Co., Ltd.	474 Bathurst
J. W. Gibson	Canada Cycle & Motor Co., Ltd.	Weston
Geo. W. Watts	Canadian General Electric Co., Ltd.	212 King St. W.
Wills MacLachlan	Joint Committee of Technical Organization	

Export Trade Committee

The Toronto Branch, having formed a Committee to procure data and report as to what organization should be provided to further Canadian export trade, Major Anthes, chairman of the Branch, informed the Executive Council at its September meeting that the Honorable Senator Nicholls has now agreed to act as Chairman of the Committee and in view of the importance of the subject the Executive Council enlarged the scope and powers of the Committee to enable it to deal with the subject, as it affected the whole of Canada. As a result of a conference with Mr. Just, Canadian trade commissioner at Petrograd, Russia, a preliminary meeting has, already been held and information obtained which will form some basis of action.

A Committee has been elected as follows, with power to act:

Hon. Senator Fred. Nicholls	Canadian General Electric Co., Limited	Toronto
F. H. Witton	Steel Co. of Canada, Ltd.	Hamilton
Col. Thomas Cantley	Nova Scotia Steel & Coal Co., Ltd.	New Glasgow
W. W. Butler	Canadian Car & Foundry Co., Ltd.	Montreal
J. P. McNaughton	Dominion Iron & Steel Co., Ltd.	Montreal
Mr. Wedlake	Cockshutt Plow Co., Ltd.	Brantford
Henry Moody	Matthew Moody & Sons	Terrebonne
Burton S. Harris	Massey-Harris Co., Ltd.	Toronto
L. L. Anthes	Anthes Foundry Co., Ltd.	Toronto
W. W. Near	Page Hersey Iron, Tube & Lead Co., Ltd.	Toronto

W. A. McKinnon	McKinnon Columbus Chain Co., Limited	St. Catharines
Sir Alexander Bertram	Pratt & Whitney Co., Ltd.	Dundas
E. Leonard	E. Leonard & Sons	London
R. Montague Davy	Dominion Bridge Co., Ltd.	Montreal
C. H. Waterous	Waterous Engine Works Co.	Brantford
W. T. Sampson	Gananoque Spring & Axle Co.	Gananoque
W. F. Heney	Heney Carriage & Harness Co.	Montreal
G. M. McGregor	Ford Motor Co. of Canada, Ltd.	Ford
D. Findlay	Findlay Bros. Co., Limited	Carleton Place
W. M. Gartshore	McClary Manufacturing Co.	London
E. H. Howson	Peterborough Lock & Mfg. Co., Limited	Peterborough
J. M. Taylor	Taylor Forbes Co., Limited	Guelph
H. G. Wright	E. T. Wright Co., Limited	Hamilton
T. R. Deacon	Manitoba Bridge & Iron Co., Ltd.	Winnipeg
E. W. Hamber	British Columbia Mills	
	Timber & Trading Co.	Vancouver
R. P. Butchart	Vancouver Portland Cement Co.	Victoria
Wm. Armstrong	Dominion Gypsum Co., Ltd.	Winnipeg
J. W. Moir	Moirs, Limited	Halifax
J. H. Brown	Canadian Roofing Mfg. Co., Ltd.	Windsor
Angus McLean	Bathurst Lumber Co., Ltd.	Bathurst, N. B.
E. Liersch	Canadian Linseed Oil Mills	Montreal
F. H. Littlefield	Canadian Oil Co's., Limited	Toronto
S. R. Parsons	British American Oil Co., Limited	Toronto
Geo. Henderson	Brandram Henderson, Ltd.	Montreal
J. G. Hay	North American Bent Chair Co., Limited	Owen Sound
Alex. Saunders	Goderich Organ Co., Ltd.	Goderich
D. J. Fraser	Singer Mfg. Co., Ltd.	St. John's, Que.
J. E. Baskett	Keenan Woodenware Mfg. Co.	Owen Sound
J. W. Alexander	Dominion Organ & Piano Co.	Bowmanville
Geo. Dobbie	Newlands & Co.	Galt
Geo. Pattinson	Geo. Pattinson & Co., Ltd.	Preston
F. Stanfield	Stanfields Limited	Truro, N. S.
A. O. Dawson	Canadian Cottons Limited	Montreal
S. J. Williams	Williams, Greene & Rome, Ltd.	Kitchener
S. B. McMichael	Canadian Optical Co., Ltd.	Toronto
W. H. Hutchison	Lake of the Woods Milling Co., Limited	Montreal
Hedley Shaw	Maple Leaf Milling Co., Ltd.	Toronto
H. Bell-Irving	Anglo British Columbia Packing Co., Limited	Vancouver
J. T. Gallagher	Gallagher, Holman, LaFrance Co.	Winnipeg
Fred Magee		Port Elgin, N. B.
Senator E. D. Smith	E. D. Smith & Sons, Ltd.	Winona
D. J. Bryne	Leonard Fisheries, Limited	Montreal
R. L. Innis, or Wm. R. Drynan	Dominion Cannery, Ltd.	Hamilton
E. C. Fox	Wm. Davies Co., Limited	Toronto
A. H. Brittain	Maritime Fish Corp., Limited	Montreal
O. W. Waller	Swift Canadian Co., Limited	Toronto
C. S. Matthews	Matthews Blackwell, Limited	Toronto
M. Hirsch	J. Hirsch & Sons Co., Ltd.	Montreal
T. H. Wardle- worth	National Drug & Chemical Co., Limited	Montreal
D. D. McTavish	Canada Carbide Co., Ltd.	Montreal
Geo. Lang	Lang Tanning Co., Limited	Kitchener
Hon. E. J. Davis	Davis Leather Co., Limited	Newmarket
L. L. McMurray	Gutta Percha & Rubber, Ltd.	Toronto
R. E. Jamieson	Canadian Consolidated Rubber Company, Limited	Montreal
C. H. Carlisle	Goodyear Tire & Rubber Co., Ltd.	Toronto
E. F. Hutchings	Great West Saddlery Co.	Winnipeg
Geo. A. Slater	Geo. A. Slater, Limited	Montreal
A. D. Huff	Laurentide Co., Limited	Montreal
Carl Riordon	Riordon Pulp & Paper Co.	Montreal
H. J. Thomas	J. R. Booth	Ottawa
F. J. Campbell	Canada Paper Co., Limited	Windsor Mills, Que.

Bureau of Advice and Information

The work performed by our Bureau of Advice and Information in sifting advertising schemes and advising our members is increasing each month. Already we have received numerous letters of appreciation from members who acted on our advice and prevented unscrupulous adventurers from furthering their dreams.

Production is not a difficult thing in these inventive days. How to create a market, how to effect an introduction between the commodity and the consumer, how to explain points of difference or superiority between one's own goods and those of competitors,—how to create new vogues,—in short, how to sell, is the difficulty that needs the greatest ingenuity to overcome. At once it will be seen that without advertisement, manufacturers would be baulked in their most cherished end. Now it takes the average business man all his time to run his business. He has little left over for the study of psychology as a selling force. He knows nothing of the individuality of type, of the fascinating sentence, or the pitfalls of design. All this and more, our Bureau of Advice and Information

under the direction of skilled advertising men explores and reports on to any member who wishes to "look before he leaps."

At the last meeting of the Canadian Paint, Oil and Varnish Association, a resolution was passed which read as follows:—

"Inasmuch as many advertising schemes of a worthless nature are being continually submitted to the members of this Association who appear to be subject to special exploitation on account of the paint and varnish manufacturers being large advertisers, and since many of these schemes come perilously close to blackmail, it was moved, seconded and resolved,

"That the members should protect themselves against this by refusing to consider any advertising proposal outside of the regular recognized and legitimate media, unless it has the written endorsement of the Association of Canadian Advertisers, Inc."

Our Bureau is affiliated with the Association of Canadian Advertisers, Inc.

The Association Grows

The Association began the year on May 1st. with a membership of 3,389. The applications since accepted number 79, making an increase in revenue of \$1,570, and the resignations number 44, with a loss in revenue of \$615. From these figures, it will be seen that the net increase in revenue is \$955, and the net increase in membership 35. These additions to the membership bring the strength at September 1st up to 3,424.

The total cash collections from membership fees for four months ending, August 31st. of last year amounted to \$26,065. For the corresponding period of 1918, the total receipts from this source were \$36,845, an increase of \$10,780, partly due to increase in membership fees, and partly to better collections.

Insurance Values and Fires

At the last meeting of the Insurance Committee it was decided to circularize the membership, pointing out the seriousness of non-concurrence in wordings, and the greater value of plants; also the difficulties attending their replacement owing to the present shortage of materials and labor. In pursuance of this decision, the following circular has been issued:—

"If a fire occurred on your premises, you would expect or at least hope to collect sufficient from the insurance companies to replace the damage. During the past four years, building values have increased forty per cent. and machinery values, in many cases, over one hundred per cent. If you have not proportionately increased your insurance, you would be a heavy loser in the event of a fire.

"This particularly applies if your policies contain a co-insurance clause, as most policies do nowadays.

"Read this example and make sure that you have properly protected yourself.

Property Value, 1914	\$100,000
Property Value, 1918	150,000
Insurance carried under 80% Insurance Clause and not increased.....	80,000

"If a fire occurred to-day, the assured, under these conditions, would collect only *two-thirds of any loss*.

"A great many Manufacturers have found on referring their policies to the Insurance Department that there is great non-concurrence in wordings, which might result in the event of a fire in reducing the amount collected from the Insurance Company, or actually avoiding the policies.

"Our Insurance Department will give you any further information if you so desire."

Activities of the Prairie Provinces Branch

Objections Entertained to Interswitching Order—Conference is Held on Uniform Regulations for Construction and Inspection of Steam Boilers—The Manitoba Farm Implements Act is Now Up for Consideration

By G. E. CARPENTER

Assistant Secretary, Prairie Provinces Branch

AT the request of this Association the Board of Railway Commissioners on the 16th September issued General Order No. 250, further suspending the date of its Order No. 230, providing for interswitching charges and regulations, until the first day of November, 1918. The objections entertained by members of this Branch to proposed Interswitching Order No. 230 were fully set forth in the July circular letter, the chief of which was that it took away the right of shippers to route their own traffic by providing that the initial carrier should enjoy the haul thereof, unless it was unable to supply cars therefor within forty-eight hours. The Manager of the Transportation Department, Mr. J. E. Walsh, has this matter in hand with the Board of Railway Commissioners.

Export and Import License

Now that the obtaining of supplies and the shipment of manufactured goods are surrounded by so many restrictions by the Governments of various countries, members are reminded that the Association can render material assistance

to them in supplying information as to regulations, securing licenses, etc. Many members of the Branch have availed themselves of this service in the past few months, and several have expressed their appreciation of the results obtained.

Uniform Regulation for Construction and Inspection of Steam Boilers

A conference of representatives of the various provinces was held in Winnipeg between August 27th and September 7th for the purpose of endeavoring to arrange for uniform regulations for the construction and inspection of steam boilers. At this conference practically all of the provinces from the Atlantic to the Pacific were represented, either by the Chief Boiler Inspector of the province, some official of the Department of Public Works, or a Minister of the Government.

After holding many sessions, the representatives of the different provinces agreed upon uniform rules, and will sub-

mit copies of the proceedings of the conference to the Association in order that representations may be made upon any points of the proposed rules which do not meet with the views of our members. However, it is not expected that there will be much controversy arise from these proceedings, as members who kept in close touch with the proceedings believe that the proposed regulations, when received, will be found, generally speaking, to be fair and acceptable to all.

The conference dealt with the regulations for the construction and inspection of steam plate and cast iron boilers, and boilers for traction engines.

During their stay in Winnipeg the visiting delegates were well looked after by manufacturers, dealers and representatives of the Provincial Government, who entertained them at a dinner at Lower Fort Garry, from whence they proceeded to the plant of the Manitoba Rolling Mills, at Selkirk, which was in full operation that evening, and presented a scene of intense activity. On another occasion the visitors motored to the shops of the Canadian Pacific Railway Company, at Weston, where a thorough inspection was made. The Deputy Minister of Public Works was the host at a very enjoyable dinner at the Agricultural College, after which the visiting delegates were shown the modern plant and equipment of the Manitoba Government for disseminating knowledge upon the basic industry of the province, viz., agriculture. On the last evening of the conference the visitors were entertained by our members at a banquet at the Royal Alexandra Hotel, when the Minister of Public Works, Hon. Mr. Grierson, acted as toastmaster. It is felt that the exchange of ideas between the representatives of the provinces and the manu-

facturers will result in a better mutual understanding of the position of each other, and that much good will result from the conference to manufacturers of, dealers in, and users of these boilers.

Manitoba Farm Implement Act

At the last session of the Manitoba Legislature a Bill respecting the sale of agricultural implements was introduced by Mr. W. H. Simms, M.L.A. for Swan River. This bill was referred to a committee consisting of Messrs. W. H. Simms, Geo. Armstrong, Geo. Malcolm, Hon. Val. Winkler, Minister of Agriculture, and Mr. J. H. Evans, Deputy Minister of Agriculture. This committee has heard depositions from agricultural societies and implement dealers, and will prepare a bill to be introduced at the next session of the Legislature. It is thought that the Saskatchewan Act will be largely followed, but there probably will be some important changes therein.

Insurance Policies

Very few of the members of this Branch have recently availed themselves of the services of the Insurance Department of the Association. The security of an insurance company cannot be properly gauged by figures alone, but depends on the company's management, its liabilities and the distribution of them, by comparison to its premium income, etc. If you have misgivings and wish to make use of the services of this department, it is suggested that you either send in your policies for examination, or write for an opinion of the companies with which you are insured to the secretary.

Activities of the British Columbia Branch

Action Taken in Regard to Personnel of New British Columbia Minimum Wage Commission—The Interswitching Regulations Objected To—Distribution of Labor

By HUGH DALTON

Assistant Secretary, British Columbia Branch

THERE was enacted at the last session of the British Columbia Legislature an Act providing for the establishment of a Commission to fix minimum wages for women employed in different industries. The British Columbia Act was modelled largely after similar legislation adopted in Manitoba, with this very important difference, that the Manitoba Act provided for a Commission composed of a chairman to be nominated by the Government and four other members, two representing the employers and two representing the employees, whereas the British Columbia Act provided for a Commission composed only of three members, no provision being made for direct representation of either employers or employees. The Executive Committee of the British Columbia Branch is strongly of the opinion that one member at least of the Commission in this province should be an employer, or someone having experience in the matters which will require to be handled. The personnel of the British Columbia Minimum Wage Commission has been announced, but this branch of the Association still has the matter in correspondence with the Minister of Labor for this province, and it is hoped will be able to obtain representation for the employers on this Commission.

The Proposed General Order No. 230 of the Board of Railway Commissioners in regard to switching and interswitching of freight traffic has been under consideration by the Transportation Committee of this branch for some time. Objections

of the British Columbia members to Clause 14 were finally submitted to the manager of the Transportation Department as follows:

"Section 14 of General Order No. 230, if allowed to stand, will undoubtedly make it difficult, if not impossible, for such concerns here as the B.C. Sugar Refining Co., or the American Can Co. (not to mention the lumber and shingle companies) to make shipments for Canadian Northern delivery at Edmonton or similar points if the shippers are located on Canadian Pacific Railway tracks, or vice versa. Under the present switching regulations it is difficult enough for the industries named above, and who are both on C.P.R. tracks here, to get a C.N.R. or any other foreign car, whether the car be destined to competitive points or not, as it takes anywhere from 48 to 96 hours from the time they order the foreign car until it is placed for loading. This is the actual average time, in fact, I might almost say the minimum time, in which a foreign car can be obtained. If, therefore, Section 14 of General Order 230 becomes operative, this condition will be very much aggravated.

"An exactly parallel case to that of Rosetown, mentioned in the protest of the prairie provinces branch, is that of Agassiz. Agassiz on the Canadian Pacific is on the north side of the Fraser River, and there are no industries at that point; but Agassiz on the Canadian Northern is on the south side of the river, and considerable shipments are handled to and from

that point. The only connection between these two points is by ferry across the river, and if the American Can Co., who are on the C.P.R. tracks, were obliged (as they would be under General Order 230) to ship a car of cans to Agassiz via the C.P.R., it would mean that the consignee would have to ferry the goods across the river, whereas if the shipper is able to bring in a C.N. empty the consignee is put to no additional expense for handling.

"Of course the answer of the Railway Company, if such an example were cited, would be that no such absurd construction would be placed on Clause 14, but shippers have learned by experience that a most inelastic construction may be placed on regulations of this kind, and, speaking from my own experience, I would not be in the least surprised to see just such a construction read into this order by the Canadian Pacific in the case of Agassiz.

Might Delay Unloading

"Identically the same conditions exist in the case of Spence's Bridge, where the C.P.R. is on one side of the river and the C.N.R. on the other. The same thing I believe applies to Princeton in regard to the G.N.R. and C.P.R., and I have no doubt that further investigation would reveal a great many cases where the application of this Order would work a downright hardship, and would tend to delay the unloading of cars rather than expedite same.

"Section 14 would also work to the distinct disadvantage of the lumber and shingle manufacturers here, who ship to the prairie provinces. I furnished the Secretaries of the Lumber and Shingle Manufacturers' Associations with copies of General Order No. 230, asking them to formulate and let me have their opinions as to how it would affect their respective industries, but to date I have not heard from either of

them, and take it for granted that for some reason or other they do not wish to make any representations on the subject.

"I will be glad if you will let me know what action is taken by the Board in their final consideration of General Order No. 230."

Classification of Industries—Distribution of Labor

Shortage and consequent large turn-over of labor in this province have prompted the suggestion of some members of this branch of the desirability of some steps being taken by the Dominion Government for the classification of essential industries, and some regulations, having in view the discouragement of the tendency of employees of allied industries to move about from one plant to another, and the minimizing of the unrest which gives rise to this tendency and which entails corresponding falling off in production of plants engaged in the provision of vital necessities. As the United States recently adopted classification of essential industries, and as their Government Labor Bureau have been in operation for some time, it is probable that action on similar lines will soon be taken by the Dominion authorities.

Sir John Willison, President of the Canadian Industrial Reconstruction Association, and Mr. W. K. George, one of the Vice-Presidents of the same Association, met the members of the Executive Committee of this Branch on September 23rd and discussed with them fully the causes leading to the formation of their Association, and outlined the work which it is proposed to do. Sir John Willison also addressed a number of public meetings while he was in Vancouver, on various phases of the problem facing Canada in connection with conditions as they will exist in this country after the war.

The Distribution of Industrial Coal

The Text of Important Order-in-Council Passed September 12, Enacting Regulations to Provide for the Uniform Distribution of Coal for Industrial Purposes in Canada—Order in which Priority of Delivery Shall Apply—Stiff Penalties for Contravention of Regulations

Published by Transportation Department

MEMBERS of the Association were advised by circular issued September 25 that the Order-in-Council extending the powers of the Fuel Controller in regard to the distribution of coal in Canada for industrial purposes would be published in full in INDUSTRIAL CANADA. In accordance with this announcement, we now reproduce this important Order-in-Council, directing particular attention to the penalties imposed for any violation of the new regulations.

P. C. 2228.

AT THE GOVERNMENT HOUSE AT OTTAWA,
THURSDAY, THE 12TH DAY OF SEPTEMBER, 1918,

PRESENT:

His Excellency,

The Governor-General in Council:

Whereas arrangements have been entered into between the Fuel Administration of the United States and the Fuel Controller for Canada whereby fixed monthly shipments of coal are now being made against Canada's allotment for the current coal year;

And whereas cases have come to the notice of the Fuel Controller where mine operators in Canada and importers of coal from the United States have given undue preferential treatment in coal supply to certain customers while neglect-

ing to adequately supply others and, in the judgment of the Fuel Controller, it is necessary and in the public interest that authoritative directions should be given those who produce or import coal for industrial uses as to the disposition of their supplies from time to time, in order to ensure fair and equitable distribution of such industrial coal among Canadian users;

Therefore, to promote the more effective prosecution of the war, His Excellency the Governor-General in Council on the recommendation of the Minister of Trade and Commerce and under and by virtue of the powers conferred by the War Measures Act, 1914, or otherwise vested in the Governor in Council, is pleased to make the following Regulations to govern the distribution of industrial coal in Canada and the same are hereby made and enacted accordingly:

REGULATIONS TO PROVIDE FOR THE UNIFORM DISTRIBUTION OF COAL FOR INDUSTRIAL USES IN CANADA.

1. Every mine operator and every importer of industrial coal in Canada shall except as hereinafter provided apportion and rotate his delivery of any such coal mined or received to his customers in proportion to their requirements so that no one consumer shall at any time have advance supplies on hand while others are unsupplied or undersupplied.

2. For the purposes of these regulations a coal shortage shall be deemed to exist when an operator or importer finds himself unable to supply the daily requirements of any one of his customers.

3. In case of coal shortage on the part of any such operator or importer priority in delivery shall be given by such operator or importer in the following order, namely:

- (a) Railroads.
- (b) Military and Naval Requirements.
- (c) Dominion Government Buildings.
- (d) Provincial and Municipal Buildings.
- (e) Public Utilities.
- (f) Retail Dealers.
- (g) Manufacturing plants engaged on War Contracts to the extent of at least twenty-five per cent. of the total production of such plants.
- (h) Other Manufacturing Plants.

4. In the case of coal shortage on the part of any operator or importer, industries under Par. 3, sub-section (h), shall only receive from such operator or importer supplies of coal sufficient for their daily needs.

5. If any user of industrial coal located East of Lake Superior other than railways has at any time prior to the 1st February, 1919, without the written consent of the Fuel Controller a greater quantity of such coal in store than sufficient for the requirements of such user until the 1st of April, 1919, or in excess of the quantity permitted under Par. 21 (a) of the Coal Regulations or under any order issued by the Fuel Administrator under Par. 21 (c) of the said Coal Regulations, such excess quantity of coal may on the order of the Fuel Controller, on formal notice to that effect, ad-

dressd by him to the owners, be requisitioned, and may, at the discretion of the Fuel Controller, be sold to any other user in Canada in need of coal, at the original cost landed in the owner's yard and the cost of the reloading and transportation of such coal to the consignee designated by the Fuel Controller, shall be paid by the said owner as a penalty for non-compliance with these regulations, and shall constitute a first charge against the proceeds of the sale.

6. Any mine operator or importer of industrial coal may at any time require any consumer to whom he is supplying coal to furnish him forthwith with a statement, signed and certified to by such consumer, showing the amount of such coal on hand and the tonnage required for each month following the date of such request, for the purpose of enabling him to comply with the requirements of Par. 1 of these regulations, and such statement shall be deemed sufficient authority for such mine operator or importer to act upon in connection with the distribution of his coal under these regulations.

7. Any mine operator, importer or consumer contravening any of the provisions of these regulations or furnishing false information under Par. 6 hereof, knowing the same to be false, shall, upon summary conviction, be guilty of an offence and be liable to a fine not exceeding \$1,000 for each offence, or imprisonment for a period not exceeding six months, or to both fine and imprisonment.

F. K. BENNETT,
Assistant Clerk of the Privy Council.

Cold Weather and Fuel Shortage Hazards

(N. F. P. A. Bulletin)

UNLESS exceptional vigilance be shown by all concerned, the coming winter may be marked by disastrous fires in sprinklered properties due to impairment of protection, which can be to a great extent avoided by the observance of proper precautions. Below are set forth some of the more pressing obligations of factory owners and managers in this matter.

It is important that owners and managers consult and co-operate to the utmost with inspection departments. The object of this is primarily to obtain advice which may obviate a serious freeze-up later on, and, secondly, to expedite the remedy of trouble should this occur.

It is not the intention of the Fuel Administration to prevent factories from obtaining enough coal to warm buildings sufficiently to keep fire protective equipment in working order, but the Administration's orders are sometimes misinterpreted locally. Inspection Departments were able on several occasions during the winter of 1917-1918 to assist in removing difficulties created by such misinterpretations.

Inspection Departments also frequently make special arrangements with the sprinkler companies whereby urgently needed repairs are given priority of attention.

1. Obtain the largest possible stock of coal as early as possible. Set aside enough to warm the plant for at least two or three weeks and hold this for emergency use, even should it become necessary to suspend operations of the plant for lack of coal. Such a reserve is one of the best forms of insurance against damage to or entire loss of property by fire. Coal should be stored by approved methods outside buildings if possible. Some plants which were unable last winter to obtain the necessary quantity of coal succeeded in tiding over the emergency by having recourse to cordwood.

2. Inspect sprinkler equipment for danger points, especially the following:

(a) Piping in exposed locations, for example, between ground and floor, in unheated attics and roof spaces, under stairs, etc. Entire systems have been rendered inoperative by neglect of the hazards of freezing in such locations. To prevent freezing, a temperature of about 40 degrees Fahrenheit should be maintained.

(b) Boxing around risers, etc. Make sure that pipe is not exposed by open joints or gaps in the boxing, remembering

that joist channels and tank platforms are places of special danger in this respect.

(c) Dry pipe alarms. Make sure that these are operative. Should a valve trip and, without giving an alarm, admit water into the pipes where it may remain undiscovered, freezing is liable to occur with disastrous results.

(d) Dry system drainage. See that all pipes drain back to the dry valve. Drip valves should be installed at low points, and these should be carefully watched during cold weather. Drip valve outlets should be plugged as a safeguard against leaking or tampering.

(e) Dry pipe valve closets. See that these are properly constructed and permanently heated, preferably by steam or electric heater. Lanterns and oil stoves, if used as emergency measures, should receive constant and careful supervision.

(f) Tank heating. See that tank heaters are in proper order and that they are of adequate capacity for the heating of the tanks.

3. Thoroughly clean all boilers and flues before winter arrives, thus increasing their efficiency. This is especially important where low pressure boilers are used for heating.

4. See that all broken windows and skylights are repaired, and that all outside doors are made thoroughly weathertight. Make sure that no attic ventilators are left open to the outer air.

5. Place thermometers in the colder portions of the plant, and keep close watch upon temperatures during cold weather.

Notwithstanding the above precautions, trouble may still occur. To meet this it is desirable to have a supply of spare sprinkler fittings for the smaller size pipes, and plugs on hand to facilitate repairs. The wise manager will also take care to be well provided with chemical extinguishers, fire pails and other first aid appliances. These do not take the place of sprinkler protection, but may prove invaluable should a fire occur while the sprinklers are temporarily out of commission.

The employment of properly instructed additional watchmen is very desirable when sprinkler systems are out of commission, and the engagement of a man for the special purpose of patrolling the plant and closing doors and windows left unnecessarily open has proved of service in reducing the consumption of coal to the minimum consistent with efficient operation.

Shall Britain Revert to Free Trade Policy?

**"I Hope,—Nay, I am Very Sure,—that the People of Britain,
their Eyes Opened by this War, will Never Go Back to It"**

By RT. HON. WILLIAM MORRIS HUGHES

Premier of the Australian Commonwealth

AT present the flow of goods into Britain is regulated. Nothing is admitted unless it is necessary to the welfare of the people. The net result is that the people go without some things altogether here, and make other things themselves that they formerly bought from other nations, mainly from Germany.

Some great industries, whose very existence was undermined by competition from Germany and German influence in this country, have now greatly strengthened their position and many new ones have sprung up. Since the floodgates of unregulated importation have been closed, the nation which seemed so dependent on the enemy for many things essential to industrial life has become entirely independent.

The women of Britain have done and are doing work formerly done by the men in the trenches, and they are doing it gloriously. You have in some measure tardily recognized what you owe to them by giving them what in common justice they were always entitled to—the franchise. The work of the women of Britain is one of the miracles of the war.

We have tapped the unused labor power of the men of the wealthier classes who are too old or physically unfit for active service. They have done and are doing splendid work, and by their example are helping to break down completely and permanently the barrier of class.

Then, too, there is another section who have helped; probably a million or more of so-called unemployables. Some of them were called tramps and loafers. They would not work—at least, it was so alleged by those who did not see in their existence a fearful condemnation of the environment that manufactured them. They were the by-products of that policy which its champions say made England rich and which, as we know to our bitter cost, almost destroyed her. Where are these unemployables to-day? Where is this mighty army of tramps and loafers? Some of them are fighting for their country; some of them have died for it; and the great majority of others are working.

But what is to become of all these after the war? What of our soldiers at the front? Will they, who have done their

duty so well, be forced back into the old life by conditions which they cannot master, against which their valor will not avail? Will they give up the bitter struggle with the enemy abroad only to undertake a still more bitter struggle at home for an existence which at no time is worth the struggle? Will these men, marked with honorable scars, again be forced to jostle elbows with the alien in fierce competition for the jobs which are all too few? Or will they come back to an England in which there is work for all?

The women who have done such splendid work—who, forced out from that secluded life which was theirs before the war, have stepped into the wider life of the busy world in order to save their country—what is to become of them? Will they step meekly back into their former quiet niches? Some of them may, no doubt, but not all. Hundreds of thousands of them will decline to go back. They have felt the exhilaration of active participation in the work of their country. They will demand a place in its industrial life. Are you making such preparation as will provide a place for them?

Then there are the millions of men who, before the war, never knew what it was to be regularly

employed, who existed, but did not live, but who are now in constant employment at good wages. What is to become of them? Is the coming of peace to ring the knell of industrial doom in their ears? They must be absorbed in peaceful avocations or become the tramps upon our highways. Will they be absorbed?

In the face of all that this war has taught us, in the face of the bitter experience of other nations, the people of England are solemnly warned by certain very superior gentlemen that any change of trade policy will be disastrous to England. These self-appointed guardians of the nation are particularly emphatic about the consequences to the workers of Britain of any impious attempts to change that policy under which they were so very prosperous and happy before the war. In view of all the facts there is something about the solicitude of these gentlemen for the welfare of the workers that seems a little overstrained—nay, indeed, suspicious. For what was the social

A WARNING FOR CANADA

Tersely, forcibly and convincingly the Australian Premier in this short address delivered in Glasgow, Scotland, warns the people of Great Britain not to be beguiled into a return to the old policy of free trade. It will, he says, mean a reversion to low wages, poverty and dependence for essential raw materials on Germany. His warning has an almost equal application to Canada where the efforts of those who are aiming, if at all possible, to maintain wages and employment on a satisfactory basis after the war are meeting with much short-sighted opposition.

and economic position of the great mass of the people before the war?

Anyone would think, to hear these gentlemen talk, that the lot of the workers in Britain was that of dwellers in a new Eden. Let us turn to the facts. They paint a picture that is sordid and depressing. They show that aliens came to these shores in droves, elbowing Englishmen out of employment and taking the bread out of their mouths.

On Brink of Abyss

They show millions of men, women and children living on the verge of starvation, dwellers on the brink of the fearful abyss, whose whole wretched lives were spent in a fierce but hopeless struggle to prevent themselves slipping down the slimy walls into the depths below. They show millions eking out a wretched existence, marrying, bringing up families on a miserably inadequate wage—millions underfed; huddled together in insanitary tenements, many of them not nearly as good as stables, living under conditions that made for physical, mental, and moral degeneration.

Cause of Poverty

Mr. Seeböhm Rowntree, in his book on poverty, writing of a large city in England, neither better nor worse than others, tells us that "43.4 per cent. of the wage-earning class and 27.84 per cent. of the total population were living in poverty." The causes of poverty, according to Mr. Rowntree, are most illuminating. He states that 51.96 per cent. of poverty is caused by low wages, and 22.16 per cent. by large families. He calls more than four children a large family.

Was it then a crime to have children under the glorious policy to which the people are adjured to return? It certainly was a crime for the millions who lived on the verge of the abyss, for which both parents and children were punished by being slowly starved to death. It is a scathing condemnation of our want of true patriotism, of humanity, of common sense.

I hope—nay, I am very sure—that the people of Britain, their eyes opened by this war, will never go back to it. Low wages, millions on the verge of starvation; German goods on our markets, British workmen unemployed, German penetration of so-called British industries, the great key industries of Britain absolutely dependent upon Germany for essential raw materials, such as dyes and tungsten, complete German control over lead, zinc, copper, tin—these are the outlines of the picture of Britain as she was under the policy to which we are told we must return after the war.

The workers of Britain are warned by the pacifists that any change of our policy will offend Germany, that it will be a declaration of economic war. The workers of Britain are told that they must allow the German leech again to fasten itself upon the industrial body of Britain, that they must again let it fatten upon our vitals lest it should take offence.

Must Bare Bosom to Enemy

What kind of Britishers are these pacifists who tell us that the policy essential to provide the workers of Britain with regular employment at decent wages and to develop the resources of the Empire is a declaration of economic war? Germany and every other great nation has such a policy, but Britain alone among the nations may not protect her own interests, but must bare her bosom to the darts of the enemy and make no protest.

The truth of the matter is obvious. These gentlemen are nothing more or less than agents of Germany. They want to revive trade with Germany in order to put money in their own pockets. They are pacifists because they think war is bad for their trade interests with Germany. They are Free Traders for exactly the same reason.

Australia has adopted that policy which it is said will offend Germany, which means economic war—so has America—and, speaking for Australia, I can say that we intend to continue and develop that policy. We believe in it. We are confident that by no other can we develop our great heritage.



A Thrilling Moment in a Canadian Shipyard

As the huge vessel slides from the ways, it looks for an instant as if she were going to capsize. A scene at the launching of the St. Mihiel at yards of The Dominion Shipbuilding Co., Toronto



Employees of the Cowan Co., Limited, Toronto, at Work in Vacant Lot Adjoining the Factory

The Greater Production Campaign of 1918

Story of What Canadian Manufacturers Accomplished in Promoting Food Production Among Their Employees during Past Season—Some Splendid Results of Co-operative Effort are Recorded—Number of Plans Employed to Work Up and Maintain Interest

By GRANT BROWN

LAST year, and again this spring, a call went out to produce food and yet more food. Submarines were sending shiploads of meat and grain to the bottom of the sea. Shipping was not available to convey the harvests of Australia and India to hungry Europe. Great Britain and our sorely tasked Allies had to depend on what Canada and the United States could spare from their harvests. Greater production had become vital to the winning of the war. And the call came when industry was short-handed, when many of the best workers were being drafted off to fight, when factories were hard pressed to supply the varied wants of battling armies. How could the need be met without lessening the production of other essentials? That was the riddle.

The purpose of this survey is to show what Canadian manufacturers have done and can do to solve it. It is too early yet to attempt an estimate of the quantity of food produced, nor is it feasible to give a complete account of the activities of all Canadian manufacturers in its production; but sufficient data have been secured to show the most successful methods adopted, and, by a description of typical activities, to give some idea of what manufacturers have been doing to further a movement as urgent as it is laudable.

Methods of Production Varied

First, as to methods. Obviously, no single plan is universally suitable. Methods of production have varied, as one might expect, according to the character of the community. In the smaller centres, in particular, where vacant land is readily accessible, it is usually enough to stimulate individual effort. Employees for the most part have their own gardens or can easily obtain idle land. In such localities manufacturers have lent their support to the gardening movement either as individuals or through the local Board of Trade. In many cases interest has been increased by holding war-garden contests and distributing prizes. Personal example, too, can do something. The manufacturer who does his digging with a spade instead of a niblick is doing public service.

Even in some larger centres, the manufacturers have found it best to encourage production by means of a central organization like the local Board of Trade, in preference to separate action.

An excellent illustration is furnished by the Guelph Horticultural Society. In Guelph, while a few companies provided land for their own employees, the majority contented themselves with supporting the strong local Horticultural Society. Through the efforts of that organization over 85 acres of vacant lots were ploughed, harrowed, and distributed among those who would cultivate them. Garden competitions were held, and cash prizes and silver cups (to be held for the ensuing year) were awarded. An interesting feature of the work was a special competition, open only to foreigners. Another feature worthy of notice was the series of six winter lectures on vegetable gardens.

Some Examples of Co-operation

Another example of co-operation is furnished by the Brantford Thrift League. The manufacturers of Brantford, both this year and last, have been the mainstay of a Thrift League. Through its work 700 lots were put into cultivation (about 70 acres). One company lent a tractor to put the land into shape.

The manufacturers of Galt, acting through the Board of Trade, helped to form the Galt Productive Association, which has been very successful, both last year and this. And several companies took community plots for their employees, while other manufacturers actively assisted in various ways. The result was to double the output of 1917. Ottawa's efforts towards greater production were guided by a "vacant lot association."

In Sherbrooke, a very successful campaign was directed by a Quebec Provincial Government official, with the assistance of the Board of Trade. As a result, some 200 vacant lots were cultivated besides the ordinary private gardens. Several other manufacturing centres were organized in a similar way.



One of the Gardens Worked by Employees of the McClary Mfg. Co., London

A somewhat different method of co-operative production is seen in the activities of the enterprising Border Chamber of Commerce (for Ford, Walkerville, Windsor, Sandwich, and Ojibway). A "Manufacturers' Co-operative Agricultural Association" was formed in March, 1918. Shares (500 shares at \$50 per share) were allotted. Twenty-five per cent. payable on allotment and the balance to be called if required. The association undertook to cultivate 500 acres of land, conveniently located. Considerable equipment was bought. A tractor, with the operator and gasoline, was donated for service. A skilled farmer was paid to give his whole time to the direction of field operations. An agricultural supervisory board was appointed. Shareholders furnished labor from among their employees. Operating expenses are a first charge on the proceeds from the sale of crops, "the primary consideration, however, is not profit, but the increase of food-stuffs." Of this experiment, Mr. F. Maclure Sclanders, F.R.G.S., Commissioner of the Border Chamber of Commerce, writes enthusiastically:

"We have about 250 acres under crop now, and will have 500 acres in fall wheat, if all goes well. Our operations are being conducted under the best principles, and even the farmers of the district consider ours the model farms of the country-side. Business brains are doing the rest.

Good Farmers Among Employees

"It is well to remember that the factory labor of this country has been very largely recruited from the farm. Therefore, it is safe to rely upon a very material percentage of good farmers on the staff of every factory. Such men do not mind, but rather enjoy a day or two of work on the land, *at their factory wages*—and it is remarkable the amount of work they can get through. They work on the land, we have found, with all the energy with which the average man in a large factory works at piece-work; and it is just a question to my mind if they are not earning every cent of their factory wages. However, as to this, I would not like to express any definite opinion meantime. Nevertheless, the point is important. I have always thought—after eighteen years' close touch with agricultural conditions in practically every Canadian province—that on the factory basis of hours and wages, farming would be rendered infinitely more attractive to labor and much more profitable to the farmer and to the country generally."

Mr. Sclanders' letter opens up interesting vistas. If the manufacturer could farm on a factory basis, problems of food shortage, of "over-production" so called, of the unequal bal-

ance of town and country could easily be solved. One wonders, however, if the weather doesn't sometimes make the factory-paid labor unprofitable—not to speak of other difficulties.

Manufacturers of St. Catharines play an active part in the Lincoln County Greater Production Co., Ltd. This is a regularly incorporated company, with a capitalization of \$25,000, and some 250 shareholders. Apart from its incorporation it resembles The Border Cities Association. As it is by no means confined to manufacturers we merely mention it here to give the manufacturers of St. Catharines the credit they deserve.

How Committees Worked

Owen Sound has a Greater Food Production Association which works on somewhat different lines. It undertook to provide farmers who wished to increase their production with a man and a team for preparing the land and seeding at a charge of \$4 a day. The farmers agreed to take off the crop and repay the association after harvesting. The men were employees skilled in farming who were given special leave of absence. One might also mention in this connection The Indian Lands Co., Ltd., of Sarnia, which has leased 175 acres of Indian Reserve land.

Stratford had a Vacant Lot Cultivation Committee which did good work. Its chairman was H. W. Strudley, manager of the Imperial Rattan Co., Limited, while John Elborn, an employee of the company was secretary. Four hundred and fifty lots and gardens were assigned and supervised by the organization. Incidentally, the Imperial Rattan Co., Limited, did some effective work among its own employees. In the spring 4,000 plants—tomatoes, cauliflower, cabbage, celery, etc., were raised in the factory windows. These were distributed among employees and others free of charge. From the beginning of May the factory was closed at noon on Saturdays and at five o'clock instead of six during the week, without loss of pay to the employees. This, in addition to the extra daylight gained by the change of the clock, afforded a good opportunity for gardening, and quite a number of the employees took up a vacant lot in addition to cultivating the home garden to the limit.

Another type of effort should not be overlooked. In many cases manufacturers have aided production not through local organizations but directly among their employees. A few notable instances may be mentioned.

In Toronto the Massey-Harris Company, Limited and the Cowan Company, Limited, have been particularly successful in encouraging their employees to produce foodstuffs. The

Massey-Harris Company bought a tract of 13 acres at the corner of St. Clair and Spadina Road and divided it into 125 lots. The land was thoroughly prepared at the Company's expense and was then turned over rent-free to employees. The Company also put in water and built a tool-house and a lavatory. A vegetable show was held at which about \$4,000 worth of vegetables were exhibited and prizes were awarded. Similar action is planned for next year.

The Cowan Company, Limited, gave over two acres of land near the factory to be worked by employees. The land was divided into 40 lots. Expert guidance was provided for by the Company. Interest is maintained by a continuous competition, as ribbons are awarded weekly to the owners of the best cultivated plots, and at the end of the season prizes will be given to those who hold most ribbons.

At Kitchener, the Kaufman Rubber Company, Limited, was very successful in this form of work. A garden competition for its five hundred employees was arranged. Eighty-one entries were made and fifteen prizes, amounting to a total of \$300, were given. The contest not only brought into cultivation vacant lots but greatly increased the yield of old gardens. For 1919 a similar competition has been announced.

Another enviable record is that of The Plymouth Cordage Co., of Wel-land. Ninety acres are cultivated by the Company, forty-five acres of oats, fifteen of rye, five of peas, five of corn, and twenty of clover. The Company has in pasture about sixty sheep—an unusual but entirely satisfactory venture. In addition, the Company encourages gardening among its employees. "The Company rents to their employees about 50 houses, fencing off for each tenant a good sized garden plot or chicken house and yard. In addition, any tenant has the privilege of fencing as much extra land of the Company's as he wishes to cultivate—the Company ploughing and harrowing the land for them free of charge."

At Weston, the Canada Cycle and Motor Company (controlled by the Russell Motor Car Company) is at the same time encouraging production and facilitating reconstruction. A large tract of land, some 75 acres, is being worked by convalescent soldiers, who are being paid for their time while they are learning to farm. The Company is co-operating with the Soldiers' Aid Commission. This experiment promises much for the future.

The report of the McClary Manufacturing Company, of London, contains many interesting features. The Company ploughed and harrowed 185 lots (averaging 40 x 120 feet) and distributed them among the employees through a garden committee. They also purchased a carload of seed potatoes from N. B. and sold them at cost, and similarly with fertilizer. The returns show a splendid advance on the results of 1917—1917, 85 lots, 40 feet by 100 feet, produced 500 bags of potatoes; 1918, 185 lots, 40 feet by 120 feet, produced 1,200 bags of potatoes. Lectures on gardening were given during

the winter. A successful display was made at the Western Fair and a special vegetable show was held later in the McClary's Co.'s dining-room, where cash prizes were awarded. In this scheme the wholesale purchase of seed and fertilizer and the special—and successful—endeavor to maintain interest call for comment.

The Tudhope-Anderson Co., Limited, of Orillia, put under cultivation two plots of ground, one 560 feet long by 245 feet wide, which was divided into sixteen equal sections and worked by sixteen different men, and the other 375 feet long by 120 feet wide, which was divided into three equal sections and was worked by three men. The workers planted potatoes largely, and produced the largest potatoes and the largest number of potatoes to a hill in this section of the country. In addition to potatoes, cabbages, celery, beans, corn, onions and turnips were grown, and all turned out very successfully. The company estimates a production of 400 bags of potatoes. The ground was originally very weedy and grassy, but the men, who did all their own work, kept it in fine shape. George E. Peacock Manager of the Manufacturing Department of the Company, was appointed chairman of a committee of the Orillia Board of Trade, to interest citizens in the community gardening proposition.

J. R. Moodie & Sons, Limited, Hamilton, formed a garden club in 1917 among the married men in their employ. One-third of an acre of unbroken land was put into a state of cultivation and was worked by the garden club. Potatoes and other vegetables were planted and, in the case of potatoes, a yield of fifty-five bushels was obtained. This year the club has worked the same piece of ground with equally good results. The Company placed the garden club on a paying basis at the start by financing the breaking of the ground. This proved of great encouragement to the employees.

Some facts about the present situation were gleaned from a visit to the headquarters of The Organization of Resources Committee. Professor S. B. McCready, recently of the Ontario Agricultural College, who supervises this phase of the work, pointed out that the

need for greater production of foodstuffs was still great. "There is a world-shortage of food. Don't forget that Great Britain is still on rations. Of course there has been some improvement in the situation. We are working now not from fear of immediate famine, but to build up a reserve of foodstuffs. We mean to insure ourselves against possible crop failures. Of course many manufacturers have done well, but they can do far more. There is still room for missionary work. And, remember, this encouragement of employees strengthens the factory organization too. It is *welfare work* of the best sort. It helps to develop loyalty and enthusiasm among the men. What is the most urgent need? Why, fall ploughing. Plans should be laid for next year and the ground prepared. Fertilizer should be put on now, or, if not now, it should be hauled in the winter and put on in the



A Fine Exhibit

Products of the McClary Mfg. Co.'s employees' Welfare Gardens shown at the Western Fair, London



Some of the Workers

Employees of Beatty Bros., Limited, Fergus, with members of their families, in the Company's Gardens



A First-Prize Garden

One acre plot winning first place in a competition conducted by the Kaufman Rubber Co., Kitchener



Another Prize-Winner

Also entered in Kaufman Rubber Co.'s competition. The owner is over sixty years of age

early spring. Then, too, the men's enthusiasm for gardening should not be allowed to lapse. Vegetable shows, winter talks on the care of gardens or the raising of poultry or rabbits will help. People should be brought to feel that it is a disgrace not to have a vegetable garden. This isn't merely a war measure. The results will be felt long after the war is over in the stimulus given to thrift and the impulse to produce. War gardens now will mean peace gardens later on."

A Record of Productive Effort

The following record may give some idea of the extent of the work manufacturers have been doing, though the survey makes no pretense of completeness:

McCormick Manufacturing Company, Limited, London, had about 50 lots under cultivation; offered prizes and held a very successful fair.

Canadian General Electric Company, Limited, Peterborough, seeded about 20 acres and obtained about 800 bushels of oats. Most of the employees have gardens.

Neal Baking Company, Limited, London, cultivated 6 acres in London and 124 acres in Essex County.

Oliver Chilled Plow Works of Canada, Limited, Hamilton, aided the city gardening scheme by ploughing the city garden plot and furnishing implements to all applicants.

Grahams, Limited, Belleville, have undertaken to grow vegetables on about 550 acres.

International Harvester Company of Canada, Limited, Hamilton, reports 30 acres under cultivation. The garden stuff grown is used in the Company's restaurant, which is conducted without profit to the Company. Community gardening is encouraged by an educational campaign through bulletin boards and the *Harvester World*.

Maple Sand, Gravel and Brick Company, Toronto, has 30 acres in oats, 5 in rye, 3 in potatoes and vegetables.

The Willys-Overland Company, Weston, has divided 10 acres into 110 plots for the benefit of employees.

The Verity Plow Company, Limited, Brantford, has taken for its employees 60 garden plots, averaging 30 feet by 200 feet.

The Sterling Rubber Company, Limited, Guelph, has used its land—about 3 acres—for growing potatoes for married employees.

The Richards-Wilcox Canadian Company, London, reports that 40 employees are cultivating 6 acres.

The De Laval Company, Limited, Peterborough, has allotted 4 or 5 acres to employees.

Beatty Bros., Limited (London branch), ploughed 6 acres on which employees have grown potatoes.

The McLaughlin Motor Car Co., Limited, Oshawa, worked through the local Organization of Resources Committee, donating a vacant field for the use of the Committee, of which six acres were under cultivation. About 200 men in the factory cultivated small garden plots with excellent results.

The Ham & Nott Company, Limited, Brantford, ploughed 2 acres behind the factory and encouraged 19 employees to raise vegetables.

Somerville Paper Box Company, Limited, London, rented 16 plots for employees.

Perfection Stove Company, Sarnia, had 2 acres in oats.

H. Mueller Manufacturing Company, Limited, Sarnia, provided a plot to be worked by employees.

The Canada Furniture Company, Woodstock, furthered the production of foodstuffs by employees.

The George McLagan Furniture Company, Limited, Stratford, helped employees in food production, as did several other Stratford companies.

The Goold, Shapley & Muir Company, Brantford, lent the Thrift League one of their tractors.

The Canada Starch Company, Limited, Brantford, provided 5 acres for 20 employees.

The Brantford Oven and Rack Company obtained plots for 7 employees.

The Frost Wire Fence Company, Hamilton, secured 18 plots for employees.

The Reconstruction Movement in the West

A General Survey of Conditions throughout Western Canada from Winnipeg to the Coast — The Present Labor Situation in British Columbia — Nucleus of the Western Committee of the Reconstruction Association is formed in Winnipeg

By SIR JOHN WILLISON

President, Canadian Industrial Reconstruction Association

DURING the last four or five weeks I have made twelve or fifteen speeches in Western Canada. I spoke to the Canadian Clubs at Winnipeg, Regina, Moose Jaw, Vancouver and Fort William, to the Rotary Club and the Kiwanis Club of Winnipeg, and to the Boards of Trade at Calgary and Lethbridge. I also had many interviews with leaders among the grain growers and influential representatives of the financial, commercial and industrial interests. At Vancouver, where the labor situation has been somewhat acute, I made two or three speeches dealing chiefly with labor and reconstruction, and explaining as clearly as I could the steps that have been taken in Great Britain, the United States and other countries to substitute co-operation for conflict and improve the human relations between capital and labor. I spent two or three hours with the employers' organization which has just been organized in British Columbia and which aims to establish better relations with the union leaders. This organization seems to include many of the chief employers of labor on the coast, and its whole disposition is not to challenge organized labor, but to end the era of conflict and establish an era of mutual sympathy, respect and confidence. No doubt there are extremists among the labor leaders at the coast as elsewhere, and it is too much to expect that permanent industrial peace can be established. But in the spirit which seems to animate both sides, adjustment of differences should be less difficult in future.

Labor Troubles on the Coast

One is assured over and over again by those who should know that the chief instigators of labor troubles in the West are English socialists. A few years ago the I.W.W. were active and mischievous, but even before this organization was pursued so sternly in the United States its power in British Columbia had waned. Unquestionably there is much feeling among returned soldiers over the very high wages received by aliens in the mines and industries. In the mines wages run from \$8 to \$14 a day, and even at this not a few workmen do not give regular or continuous service. One hears the curious argument that as a result of prohibition so much money is saved by aliens that they do not require to work regularly. Whatever else there may be in this contention, there is at least an implication that prohibition prohibits. Even those who denounce aliens agree that without this labor it would be almost impossible to operate the mines or the industries, or even gather the harvest. Moreover, it is admitted that this "foreign" labor is reasonable when left to itself. It follows somewhat submissively at the heels of agitators, but of itself does not plot mischief or make disturbance. I met no two people who could agree as to what new measures could be wisely taken against aliens, or how the wages of such labor could be controlled. The general contention was that it should be commandeered by the Government, and forced to work for pay proportionate to the allowances of soldiers and their dependants. It was as freely admitted, however, that these people were invited to Canada,

that upon the whole they have not been a cause of trouble during the war, and that aside from possible international complications the results from forced labor are thoroughly unsatisfactory. Still it is impossible not to feel that the balances are unfairly adjusted. Those who enjoy the privileges of Canadian citizenship should be full partners also in its duties and responsibilities. It is hard to see aliens grow fuller in the pocket while the children of the household suffer and die for the institutions by which they are sheltered.

Western Cities are Prosperous

The chief western cities now show few evidences of the depression which followed "the boom" of six or seven years ago. In Winnipeg, Regina, Calgary and Vancouver business is active and resting on stable foundations. There is not much building, and, as in Ontario, housing accommodation becomes inadequate. Since few munition contracts could be placed in Western Canada, reconstruction will be less difficult when the war is over. There is perhaps a feeling in the West that it has not shared proportionately in necessary war expenditures. On the coast, however, thousands of men are employed in shipbuilding. I visited one yard where 2,760 men are at work, where four vessels are under construction, and where in forty-five or fifty days a vessel is completed. To Victoria and Vancouver the revival of shipbuilding has been of great advantage. The demand for labor is in excess of the supply. All industries on the coast seem to be prosperous, and generally there is an eager interest in the problems of reconstruction, and particularly in the permanence of the shipbuilding industry.

At Winnipeg the nucleus of a Western committee of the Reconstruction Association was formed. Of this Sir Augustus Nanton is chairman, and associated with him are ten or a dozen of the local industrial and business leaders. It is intended that other Western communities shall have representation on the committee, and that a permanent secretary shall be appointed, with headquarters at Winnipeg. It was intended that the Western committee should also cover British Columbia, but conditions between the prairie country and the coast are so different that a separate committee may be organized for British Columbia, with headquarters at Vancouver. This seemed to be the general desire of representatives of the Board of Trade and Manufacturers' Association of Vancouver, although the necessity for close co-operation with the prairie provinces was always emphasized.

Interviews With Grain Growers

It was my fortune to have interviews with many representatives of the Grain Growers. I must confess that I was always impressed by their size and grasp. No doubt there are extremists among the Grain Growers, as among other classes and elements, but I am more firmly convinced than ever before that all acute differences between East and West can be removed, and that closer personal acquaintance and

better understanding of agricultural and industrial problems, alike in East and West, is all that is required to ensure unity and stability during the era of reconstruction. A few years ago the organized grain growers and the commercial, financial and industrial interests of Western Canada established a Council of Agriculture and Commerce. This council has held periodical conferences, to abolish grievance, adjust difference and secure co-operation for common objects. It seems to be universally agreed that through these conferences much misunderstanding has been removed and far more satisfactory relations established between the agricultural and business interests of Western Canada. The Western Grain Growers are perhaps the most powerful agrarian organization that ever has been created in any country. It has been developed with much wisdom and foresight. All its affairs are managed with signal efficiency. No farmers' organization in the United States has had such permanence or such genius for co-operation. No greater successes have been achieved by the agrarian party of Germany. Strongly entrenched in the West, the Grain Growers are now extending their organization to older Canada. Ontario has a Council of Agriculture, and organization has begun in Quebec and the Atlantic provinces. Over all there is a National Council, exercising executive control, stimulating and unifying the provincial associations and combining all the forces for a common national object.

A Common Political Programme

Not only are the farmers organizing a great national co-operative movement, but they are also developing a common political programme. In the West their political strength is formidable. In the East it is not inconsiderable, and will increase as organization is extended. All this is legitimate enough. The facts are stated only in order that the situation may be understood, and not with any thought of censure or attack. But if a national organization of farmers is desirable, a national organization of the business interests is not less desirable or less legitimate. If the Western provinces are benefited by conferences between Western farmers and the representatives of other interests, there should be at least equal advantage in national conferences between the leaders of the organized farmers and representatives of organized labor and of the commercial, financial and industrial elements. It is as important to consider common interests as to reconcile differences. There are differences to be reconciled between sections of the country and elements of the population. There are common interests to be developed and strengthened. If the chief and deliberate objects of two such national organizations as I have described should be to engage in conflict, probably only mischief would follow. If the chief objects should be to produce understanding and co-operation for the common welfare, general and immeasurable advantages should result.

War Contracts and Housing

Great Shortage of Housing Exists in Some Sixty United States Cities where War Supplies are Being Made

Housing and transportation conditions have become so congested in some sixty towns and cities where war supplies are being manufactured, says the *Manufacturers' News*, that the General Staff has advised all of the War Department's supply bureaus to give careful consideration to local conditions before placing further contracts. In each of the sixty towns, the bureau of industrial housing of the Labor Department has found it necessary to make provision to expend federal appropriations in order to relieve shortage of housing and transportation.

At the present time, it is found that the extreme congestion of living conditions in some localities is so great that the use of beds, three shifts a day, has become imperative. This condition has created an exceedingly high labor turnover which has made for increased cost and delay in the completion of work. The General Staff will see to it that the placing of contracts in these points is reduced to the minimum and has especially instructed the quartermaster corps to avoid these points because of the relative flexibility of their contracts. It is not the object to cut off new orders in the towns named, but to regulate them. Where it is a question of new plants requiring additional power, additional labor or the building of new structures, or the need of largely increased facilities, the disposition is to discourage such increases and to develop such new industries outside of the districts mentioned.

Discrimination Proved

An Interesting Case Involving a Transportation Question Heard in the Courts of Detroit

In proceedings against the Michigan Central for failure to observe published tariffs by giving discriminatory privileges in regard to transportation in failing to exact demurrage charges, the railroad contended both that the specified free time had not elapsed and that the time provisions of the demurrage tariff were generally inapplicable in the circumstances. The case grew out of the great congestion of traffic in and about Detroit during the summer of 1912. Certain carloads of building material were delayed after arrival because, according to the indictment, the consignee was not ready to use the material and had no yards to store it. A concession was made to the consignee in not being charged one dollar a day for each car, according to the published demurrage tariff. The railroad's theory was that the delays were caused by the traffic congestion, which was beyond its control, and that the cancelling of the charges was not a concession. In affirming a conviction as to certain of the cars the Circuit Court of Appeals, Sixth Circuit, found from the record that failure to make delivery of the contents of the cars within the free time was due to the fault of the consignee and not of the railroad. It was immaterial that the cars had been placed on the delivery track in an order different from that of their shipment, in which order the consignee wanted their contents, any claim of the consignee on this account being separate from that of liability for demurrage. A provision of a demurrage tariff that no demurrage charges shall be assessed for detention of cars through railroad errors or omissions was held to refer to such errors and omissions after placement of the cars on the delivery tracks and notice thereof. Under a provision of demurrage tariff for extra free time in case of bunching, as the direct result of the act or neglect of the carrier, bunching as the result of the consignee's previous fault in not accepting will not avail. Though a demurrage tariff contemplates a notice of arrival of cars and a notice of placement, any notice of placement agreed on by the parties is sufficient to start the running of time, irrespective of sufficient preliminary notice of arrival. The trial court imposed the full penalty of \$24,000 for the failure to charge about \$60 demurrage on 12 out of 30 cars covered by the indictment. It was held that the trial court, in deciding on the penalty, could consider discrimination disclosed for which there could be no conviction until the Interstate Commerce Commission passed on the matter, or even if it did not violate the letter of any demurrage or other tariff. W. Evans, D. J., dissented on that last point.—*Michigan Central v. United States*, 246 Fed. 353.

Industrial Warfare

A Constructive Criticism of the Frequent Clashes Between "Capital and Labor"

The Sixth of a Series of Helpful Suggestions for Progressive Manufacturers

By ROBERT ARKELL

Of Thorne, Mulholland, Howson and McPherson, Industrial Advisors, Toronto

TWO prominent American manufacturers, each of whom had given considerable thought to his employment problems, met recently in a Chicago hotel and a heated discussion soon followed. Each man had created an employment department, equipped a factory hospital and engaged competent medical assistance, established a circulating library and indulged in other branches of welfare work, BUT—only one of the two had succeeded in appreciably reducing his labor turnover. As was to be expected the unsuccessful one was on the verge of condemning the whole experiment as an expensive modern fad, but the other, having received a good return on his investment, naturally would not accept such a ridiculous verdict.

"The trouble with the majority of employers," the latter was saying, "is that they either consider the employment problem incapable of solution or believe that it is simply a question of dollars and cents. Both views are wrong. When you attempt to correct your labor troubles you must recognize the human element involved. If your employees see you taking a sudden interest in their welfare it is to be expected that they will suspect you of trying to 'put one over' on them, and your best plans will fail because the necessary co-operation is lacking. If you do not believe that the workers are entitled to better working conditions—if you do not earnestly desire your employees to be properly looked after—all the cafeterias, lounge rooms, shower baths and the like in the world will not reduce your labor turnover one per cent. In fact anyone whose heart is not in his work *for it alone*—will never succeed, and this applies equally to the foreman on a production schedule and the large employer of labor trying to hold his help."

Every manufacturer who has given the labor question more than a passing thought, knows that, on the average, small plants have a lower percentage of turnover than the

larger shops, and the reason for this is obvious. The "boss" of the hundred-man factory knows each one of his men personally, speaks to them cordially when he meets them on the street and otherwise treats them as red-blooded men instead of cogs in his business machine. It is clear, however, that a

general manager with ten thousand names on his payroll could not gain the acquaintance of each one of them, but that does not mean that he has to ignore them entirely. More than one successful employer has found it to his advantage to have regular meetings of his department heads. At the Nash Motors Plant there are generally a hundred foremen, etc., present—so numbers do not count—and the good fellowship engendered always works its way into the lower ranks.

Not long ago, the chief executive of a large concern, who privately looked upon his employees as a necessary evil, was overheard saying to his superintendent that he was "forced, at present, to swallow a great many things" from his help but that his "turn is coming, thank goodness." If this man will accept advice it should be said to him that he is paying dearly for the pleasant thought of "getting even." It is just such talk as this that keeps labor in a belligerent mood. As long as each class is bound to

have the last blow there will never be peace in the industrial world.

Then there is the question of wages—the foundation of the whole labor problem. It is estimated that less than five per cent. of employers grant increases voluntarily—that is, give the men a raise in wages without being asked. Now, as anyone knows, one dollar received unexpectedly is worth two dollars gained by force. There is something in human nature which always treats a victory, no matter how unfair, as a right that has been unlawfully withheld. But, how, one large employer asked, is he to know when the men deserve a raise? There are various methods used, but the simplest

A Few Pithy Sentences from Mr. Arkell's Article

"As long as each class is bound to have the last blow there will never be peace in the industrial world."

"When your employees leave because they 'don't like the work' it is not always fancy on their part. A work table or chair of an improper height is very tiresome and turns pleasant work into drudgery."

"If you do not believe the workers are entitled to better working conditions—if you do not earnestly desire your employees to be properly looked after—all the cafeterias, lounge rooms and the like in the world will not reduce your labor turnover one per cent."

"More than one successful employer has found it to his advantage to have regular meetings of his department heads . . . the good fellowship engendered always works its way into the lower ranks."

"The employment problem, instead of being a source of worry, can materially increase your profits."

is that proposed by L. K. Comstock in an article entitled, "A Proposed Scientific System of Wage Adjustments," which was read before the Conference Club in Ashville, N.C. In brief, he said:

A Scientific Wage System

"On the authority of the Bureau of Labor Statistics, the wage-earner spends three-quarters of his wages for food, clothing, rent and other things responding to general price fluctuations. Assuming then, that a daily wage of \$5.20 had been in force, \$3.90 would have been set aside for subsistence. If, then, Dun's index number indicated that subsistence costs say, 15.6 per cent. more than when the present scale was inaugurated, the \$3.90 would therefore be increased 15.6 per cent., making it \$4.50 to which, of course, should be added the balance of his wages which is not affected by the commodity market, or \$1.30 (5.20-3.90): thus making the readjusted rate \$5.80, or a net advance over the base rate of sixty cents per day."

The advantage of this plan over all others is that the facts on which it is based are already in existence and represent as fair and as equitable an adjustment as it is possible to make. The necessary computations are easily made and the men can see that instead of an arbitrary raise that the increase is governed by the ruling of an absolutely impartial judge, viz.—Dun's index number. To follow this system religiously it would, of course, be necessary to engage an employment manager if your plant employed three hundred or more workers, but as the employment manager would have numerous other activities there is not the slightest doubt that a handsome dividend could be declared by a competent man. Taking the labor turnover alone and allowing only \$15.00 as the cost of replacing employees who leave, a three-hundred-hand-plant, with the low average turnover of 100 per cent., he could save his own salary and greatly im-

prove the class of help which is bound to be reflected in their production.

In one department of a Toronto factory it was noticed that apart from a dozen or so old hands that the personnel was continually changing, and when the foreman was asked for a reason he replied off-hand that the "workers are a restless bunch nowadays." A short while afterward, however, this plant engaged an employment manager and after he had card-indexed every employee he made it his business to find out why each one left. Under the old system the foreman would have been satisfied to list the answer generally given, viz.: "Don't like the work," but the employment manager politely insisted on knowing what there was about the work which was disliked and he found out that the chairs were not of a proper height for the work tables, with the result that the work became very tiresome early in the day. To-day that department has changed from one of the most restless to the best, and the production records show an enormous increase. That employment manager now saves his salary every two months and he seldom has to advertise for help.

Make Study of Employment

With the present scarcity of labor it is important that every legitimate method of securing and holding help be exercised, but even with the return of peace, when labor will be more plentiful, it will be equally essential to forestall desertions from your forces. In my article for May it was pointed out what a waste of money it is to be indifferent as to who comes or goes in your factory, and it is, therefore, unnecessary to repeat those reasons here, but if you will take the analysis then published and prepare an estimated cost of "Hiring and Firing" in each department you will realize how the employment problem instead of being a source of worry can materially increase your profits.

The Fuel Situation Up-to-Date

(From "Manufacturers' News")

DIRECTOR GENERAL McADOO and Fuel Administrator Garfield are again in a state of disagreement. Mr. McAdoo, under date of September 8, announced: "Of late cars have been supplied to the coal mines more rapidly than they have been able to load them."

In an article in *Collier's Weekly*, Dr. Garfield makes the assertion that "to-day the limiting factor in production of coal is still transportation," and that "the Fuel Administration has, with few delays, filled the biggest stream of coal cars the railroads can haul to the mines."

C. E. Leshner, of the United States Geological Survey, who supplies the press of the country with coal statistics, states that the average loss of production for the last three weeks of August was 20.6 per cent., and the average car shortage 10.9 per cent., or over 50 per cent. of the total loss of production.

There must be lack of co-operation somewhere. During last winter's coal shortage the blame was shifted around from one government department to the other. The coal men blamed the railroads and the railroads held the producers responsible for the universal fuel shortage.

The Fuel Administration has been consistent in claiming a shortage of cars, and the Railroad Administration has prided itself upon furnishing an ample car supply to mining companies. Evidently one or the other is wrong, but nothing is being done by either to prevent a repetition of the calamities

ties which, eight or nine months ago, paralyzed American industry.

With winter staring us in the face, Mr. Leshner presents figures showing that production for the coal year to September 14th is approximately 17,000,000 tons behind the summer requirements outlined by the Fuel Administration. This would make necessary an average daily production during the balance of the coal year of 2,041,000 net tons or 3.2 per cent. more than the average daily production to September 14.

While operating conditions have improved in practically all coal fields shortage of coal cars caused material losses in all districts and limited production at many mines.

This is the coal situation up to date. Large consumers consider it critical, but *Manufacturers' News* ventures the opinion that if miners, producers, railroads and fuel administrators can be persuaded to work together in harmony all danger of a coal shortage can be avoided.

Team work is needed, not explanations. There has been altogether too much talk and not enough coherent effort. The fuel problem is too important to be made the subject of useless debates, of criminations and recriminations. The people want factory fires burning. They want their homes kept comfortable.

In other words, they want unity of action at Washington and united efforts on the part of miners, mine-owners, and the Government. They don't want national efficiency handicapped by rhetorical magazine articles or official jealousy.

Making Things Pleasant for the Workers

A Description of Dalhousie Hall, the Splendid New Home for Women and Girl Employees Recently Completed by the Dominion Rubber System at Port Dalhousie, Ontario, in Connection with their Maple Leaf Rubber Factory

By W. A. TRAILL

Dominion Rubber System, Montreal

THE illustrations show exterior and interior views of Dalhousie Hall, the home recently completed at Port Dalhousie, Ont., to be used exclusively for women and girls employed at our Maple Leaf Rubber Factory. Dalhousie Hall is of substantial, solid brick construction, design of the exterior being plain but effective. The architect, Mr. A. E. Nicholson, St. Catharines, gave special attention to the interior planning and decoration, with a view to the erection of a building that would be most inviting and home-like in its appointments. In accordance with the wishes of President Rieder, nothing was omitted that would in any way be desirable to render the building attractive and comfortable.

The entrance to Dalhousie Hall on Main St. is of carved stone and is ornamented with tasteful electric light standards, the main doorway being slightly above the level of the street. Through a pair of French doors of solid oak, the visitor enters a lobby, where a short stairway leads to the level of the main floor, six or eight feet above the street. Another pair of doors leads thence into the main hallway, and to the large reception room extending across the full width of the building and divided into two sections by the hallway. The section on the right is used as a living room, and that on the left is a music room. Both are furnished with furniture including, tables, chairs, pianola, etc., which, with the hangings and pictures, show careful selection as to harmony of color and design. The main hall is carried through the centre of the building to the entrance of the dining room, the vista from the entrance extending through

the glass doors of the dining room to a large open fire-place immediately opposite the entrance.

French oaken doors, of the type already referred to, are a notable feature of the designing throughout the building;

these doors separate main hall from dining room, and all stair halls from main halls on each floor, thus providing plenty of light and at the same time effectively separating each apartment. The woodwork throughout is of hardwood, satin finish.

Reverting again to the main hall, this is flanked on the left with another small reception room, an ample sized cloakroom, and, further in rear adjoining the dining room, the office of the social secretary. The dining room with its polished maple floor, large brick fire-place extending to the beam ceiling, and windows in pairs on east and west sides, is a most attractive room. It is furnished with twelve circular tables, having a maximum seating capacity, without crowding, for 72 persons. In

the rear of the dining room, and extending across the width of the building, is a most thoroughly equipped kitchen, with every facility for rapid service of appetizing meals. An unusually large electric range occupies a central position. A large refrigerator on the main floor is supplemented by a cold storage compartment in the basement.

The basement floor, which is sufficiently elevated to be very well lighted, includes a recreation room appropriately decorated, suitable for the entertainment of a large number of guests. Furniture includes tables, chairs, piano, etc. A laundry, with several sets of stationary tubs, ironing boards



Dalhousie Hall

Exterior View of the Home for Women Employees



Recreation Room



Section of Dining Room

with electric irons, drying closets, etc., is also included on this floor. The heating equipment for the building—a Spencer steam boiler system—fuel storage, complete water-works system comprising electrically-driven pumps and storage tanks for hard and soft water, are also included in the basement equipment.

The first and second floors are used for completely furnished bedrooms. The furniture for these rooms was specially designed, principally in ivory enamel finish. Draperies and rugs for these rooms are in a variety of tones to harmonize with the furniture. Completely equipped lavatories are placed on each floor.

At the rear of the building, balconies on each floor give views of Lake Ontario, which is but a couple of hundred yards distant. A splendid bathing beach is in close proximity and Mr. Rieder has kindly permitted the erection of suitable buildings on his property, fronting on the lake shore above the beach, for use of residents of Dalhousie Hall. Much credit is due to Miss D. Rieder, Social Secretary, for the excellent taste in which the building is furnished throughout, and for the admirable manner in which the home is conducted.

The enterprise is one which places the Dominion Rubber System as a leader in movements having for their object the welfare of employees. It is in keeping with the progressive policy taken by the Company, under the presidency of Mr. Rieder, and heretofore evidenced by a continuity of interest in the welfare of all

Dominion Rubber System employees. Credit must also be given to Mr. P. Y. Smiley, Footwear Factory Manager for the zeal and interest he has manifested in this project. He has ably supported our president in providing a home that is easily the best and most complete of its kind in Canada.

The opening of Dalhousie Hall is another milestone in the progress of welfare work in Canada. The growth of the idea has been very gradual, and at times it seemed as if no progress at all was being made. The war, however, has changed the viewpoint of a good many manufacturers as it has tended to alter working conditions. The revulsion of feeling caused by German atrocities has made us more humanitarian in our attitude towards one another and employers of labor are feeling a new responsibility towards their workpeople. Apart from

the altruistic side of the thing, there is an economic value in welfare work that is not being overlooked in these days when enforced production is so necessary. To get the best out of any man, sound health and sanitary working conditions are needful, and in providing rest and lunch rooms and all the other varieties of welfare work, this end is being achieved. It is only of late that housing of the workers has come to the fore, and it is in this direction that the Dominion Rubber System have been developing their plans through the erection of the new Dalhousie Hall.



The Reception Room

Standard-Sized Catalogues and Booklets

Spread of a Movement Under Which Important Economies can be Made in the Manufacture of Paper, in the Printing and Binding of Catalogues and in their Mailing, Handling and Filing—Limitations of Paper Sizes now being made in Canada

By TRAVICE A. TOD

Manager Montreal Branch, Graphic Arts Section, Canadian Manufacturers Association

IT must be quite obvious to manufacturers and others who publish catalogues and booklets, that there is considerable waste entailed, through odd sizes being demanded, as this necessitates, not only raw stock manufacturers, but book paper and coated paper manufacturers, changing over their machines, more often than not for comparatively short runs, with the result that there is always a loss in getting a special run of paper started, before the quality, strength, and color are found to be in accordance with the requirements of the order. Then the mills always have to make more than the order calls for, to allow for waste and spoilage. This extra quantity, or over-run, is frequently refused by the printers, who have no use for odd sizes, beyond the quantity required for the particular order, and consequently the mills are compelled to either sell the same as waste, or job it off at reduced prices, thereby entailing a loss to them.

Should the printers accept an over-run, and not require it for the particular job it was made for, they in their turn are left with odd sizes on their hands, which they invariably have to cut down to a standard size, or use for some cheaper job, both of which means a loss to them. On this page appears a table giving the standard sizes of catalogues and booklets, that may be produced *without waste*, from the *three standard size sheets*. The National Association of Purchasing Agents of the U.S.A. finally adopted *two* sizes for all catalogues and booklets, viz.: $7\frac{1}{2} \times 10\frac{5}{8}$ and $5\frac{1}{4} \times 7\frac{1}{2}$.

This movement to standardize catalogue sizes is rapidly gaining in favor. At the annual convention of the National Retail Hardware Association, held recently, the following resolution was passed:

"Whereas, investigation has disclosed the standardization of catalogue sizes will add greatly to the convenience and economy of mailing, handling, and filing, and will save mil-

lions of dollars annually in the paper and printing industries, therefore, be it *resolved*, that we endorse the recommendation of the National Association of Purchasing Agents that $7\frac{1}{2}$ inches by $10\frac{5}{8}$ inches be the standard size for all catalogues and similar literature." This Association is made up of

twenty-nine affiliated associations covering practically the entire United States.

The United Typothetæ of America, which has considerably over 2,000 printers in its membership, has also approved and adopted the *standard sizes* for catalogues and booklets.

Since the National Association of Purchasing Agents of United States transmitted to their Government the following resolution, viz.: "*Resolved*, that we recommend for catalogues the manufacture of paper sheets ranging as follows: 25 x 38, 32 x 44, 33 x 46, with double sizes; that we also indorse the weights of 40, 45, 50, 60, 70 and 80 lbs. on the basis of 25 x 38, and that colors be limited to white and natural, and that we communicate our suggestions to the Bureaus at Washington." The Pulp and Paper Section of the War Industries Board of the United States, have issued the following regulations regard-

ing the manufacture of Book Paper, under date of August 1st, 1918.

We are restricted in the manufacture of Book Papers, in accordance with the following instructions received from Mr. T. E. Donnelly, Chief, Pulp and Paper Section, War Industries Board:

First: The following maximum basis weights are established:

Machine Finish	25 x 38—50
S. & S. C.	30—35—40—45—50—60
English Finish	25 x 38—60
Egg Shell Finish	25 x 38—60
Coated Book	25 x 38—80

Standard Sizes of Catalogues and Booklets

Standard Sheet Sizes	Page Size	No. of Pages	Cuts From	Cover Paper
25 x 38	$9\frac{1}{4} \times 12\frac{1}{8}$	$\left\{ \begin{array}{l} 8 \\ 16 \end{array} \right.$	$\left\{ \begin{array}{l} \frac{1}{2} \text{ Sheet} \\ \text{Full Sheet} \end{array} \right.$	20 x 26—2 out
	$6 \times 9\frac{1}{8}$	$\left\{ \begin{array}{l} 8 \\ 16 \\ 32 \end{array} \right.$	$\left\{ \begin{array}{l} \frac{1}{4} \text{ Sheet} \\ \frac{1}{2} \text{ Sheet} \\ \text{Full Sheet} \end{array} \right.$	20 x 26—4 out or 23 x 29—5 out
	$4\frac{1}{2} \times 5\frac{7}{8}$	$\left\{ \begin{array}{l} 8 \\ 16 \\ 32 \end{array} \right.$	$\left\{ \begin{array}{l} \frac{1}{8} \text{ Sheet} \\ \frac{1}{4} \text{ Sheet} \\ \frac{1}{2} \text{ Sheet} \end{array} \right.$	20 x 26—8 out
32 x 44	$7\frac{1}{2} \times 10\frac{5}{8}$ or $7\frac{3}{4} \times 10\frac{5}{8}$	$\left\{ \begin{array}{l} 8 \\ 16 \\ 32 \end{array} \right.$	$\left\{ \begin{array}{l} \frac{1}{4} \text{ Sheet} \\ \frac{1}{2} \text{ Sheet} \\ \text{Full Sheet} \end{array} \right.$	23 x 29—3 out
	$5\frac{1}{4} \times 7\frac{1}{2}$ or $5\frac{1}{4} \times 7\frac{3}{8}$	$\left\{ \begin{array}{l} 8 \\ 16 \\ 32 \end{array} \right.$	$\left\{ \begin{array}{l} \frac{1}{8} \text{ Sheet} \\ \frac{1}{4} \text{ Sheet} \\ \frac{1}{2} \text{ Sheet} \end{array} \right.$	23 x 29—6 out
	$3\frac{3}{4} \times 5\frac{1}{8}$	$\left\{ \begin{array}{l} 8 \\ 16 \\ 32 \end{array} \right.$	$\left\{ \begin{array}{l} \frac{1}{16} \text{ Sheet} \\ \frac{1}{8} \text{ Sheet} \\ \frac{1}{4} \text{ Sheet} \end{array} \right.$	23 x 29—13 out
33 x 46	$8 \times 11\frac{1}{8}$	$\left\{ \begin{array}{l} 8 \\ 16 \\ 32 \end{array} \right.$	$\left\{ \begin{array}{l} \frac{1}{4} \text{ Sheet} \\ \frac{1}{2} \text{ Sheet} \\ \text{Full Sheet} \end{array} \right.$	23 x 29—3 out
	$5\frac{1}{2} \times 7\frac{7}{8}$	$\left\{ \begin{array}{l} 8 \\ 16 \\ 32 \end{array} \right.$	$\left\{ \begin{array}{l} \frac{1}{8} \text{ Sheet} \\ \frac{1}{4} \text{ Sheet} \\ \frac{1}{2} \text{ Sheet} \end{array} \right.$	23 x 29—6 out
	$3\frac{5}{8} \times 5\frac{3}{8}$	$\left\{ \begin{array}{l} 8 \\ 16 \\ 32 \end{array} \right.$	$\left\{ \begin{array}{l} \frac{1}{16} \text{ Sheet} \\ \frac{1}{8} \text{ Sheet} \\ \frac{1}{4} \text{ Sheet} \end{array} \right.$	23 x 29—13 out

Note.—All booklet sizes are trimmed page sizes allowing $\frac{1}{8}$ inch trim at top and $\frac{1}{4}$ inch trim at bottom and front. Binding side listed last. The Graphic Arts Section of the Canadian Manufacturers Association (Montreal Branch) have approved the above table of sizes.

Second: All papers shall be made to substance weights, namely:

Machine Finish	30—35—40—45—50
S. & S. C.	30—35—40—45—50—60
English Finish	30—35—40—45—50—60
Antique Finish	30—35—40—45—50—60
Coated	60—70—80

Third: All orders for a special size, i.e., a size not regularly carried in stock for resale to commercial trade, shall be confined to a substance weight basis and only made when such orders are for ten thousand pounds or more, and for one delivery.

Fourth: Orders for other than a substance weight may be made when the order is for 25 tons or more, for one delivery, provided the special weight to be made shall not exceed the maximum basis weight in the grade specified.

Fifth: All colors except white, natural, or India tint shall be eliminated.

Sixth: All laid book papers shall be eliminated.

While the conditions obtaining in Canada are not quite identical with the United States, where the question of freight is a very serious one, also the fact that the tonnage manufactured here is very much smaller than that of the States, yet the Canadian Pulp and Paper Association has given considerable attention to the standardizing of its manufactures, especially as regards the sizes and weights, and the Book and Writing Section issued the following "Amendment to Trade Customs," under date of August 29th, 1918:

"Standard weights for Machine Finish Book Papers shall be based on 25 x 38, 40, 50 and 60 lbs. to 500 sheets.

"For substances lighter than basis of 25 x 38, 40 lbs. 500s down to substance 25 x 38, 35 lbs. 500s there shall be an increase of ½ cent. per lb., with a further increase of 1 cent per lb. on substances lighter than 35 lbs. down to 30 lbs. No paper to be made lighter than substance No. 30.

"Standard weights for Super-Calendered Book and Litho papers shall be based on 25 x 38, 40, 50, 60 and 80 lbs. to 500 sheets.

"No s/c Book and Litho. paper shall be supplied in any substance thinner than 25 x 38, 40 lbs. per 500 sheets.

"There shall be a differential of ½ cent. per lb. between all Machine Finish and Super-Calendered Book, Litho. and Writing papers.

"Special sizes may be supplied in standard substances in quantities of not less than 3,000 pounds. For quantities less than this an extra charge of ½ cent. per lb. shall be made.

"Special and standard sizes may be made in weights other than the above standards in quantities of not less than 10,000 pounds, which, however, may be supplied in more than one size."

The term Book Paper in relation to the above trade custom shall not include such specialties as;—

"Offset Paper: Heavy Art paper, Antique Laid and Wove Book, Featherweight Book and Tariff papers."

Table showing actual weights (figured to within ½ lb.) of stock and other sizes of Book Papers when supplied in standard substance numbers:

Size.	Substance Numbers.				
25 x38	40	50	60	80	
24½x36½	37.5 lbs.	47 lbs.	56.5 lbs.	75.51 lbs.	
25 x38	40 lbs.	50 lbs.	60 lbs.	80 lbs.	
28 x42	49.5 lbs.	61.5 lbs.	74 lbs.	99 lbs.	
30 x40	50.5 lbs.	63 lbs.	75.5 lbs.	101 lbs.	
32 x44	59 lbs.	74 lbs.	88.5 lbs.	119 lbs.	
38 x50	80 lbs.	100 lbs.	120 lbs.	160 lbs.	
42 x56	99 lbs.	123 lbs.	148 lbs.	198 lbs.	

Weight of any sizes may be calculated in proportion to 25 x 38 (950 sq. ins.) and the required substance number.

This is not a list of stock carried, but a table of equivalent weights.

The manufacturers of this country are no doubt fully alive to the importance of the elimination of waste in their own establishments, and undoubtedly will be glad of the opportunity of working in conjunction with their confreres in the United States, by standardizing their catalogues and advertising literature, to conform to the sizes mentioned above.

The "Regulations regarding the manufacture of Book Papers," issued by the War Industries Board of the United States, as well as the "Amendment to Trade Customs," issued by the Book and Writing Section of the Canadian Pulp and Paper Association, are used in this article by courtesy of Mr. Arthur L. Dawe, Secretary of the Canadian Pulp and Paper Association.

Victoria Manufacturers Form Organization

(From "Victoria Colonist")

A MOVE towards bringing the manufacturers of Victoria, B.C., together under one banner was taken last month when the creation of a manufacturers' bureau, or section of the Board of Trade, was effected.

The nucleus of the bureau is made up of the present standing committee on manufactures, composed of Messrs. H. J. Pendray, Aaron Gonnason, Fred. Moore, W. E. Staneland and Norman A. Yarrow.

The membership of the Board of Trade embraces about seventy manufacturers of this city, but under the present constitution of the Board there is little opportunity for them to act as a representative body.

President Joshua Kingham was chairman of the preliminary meeting and explained that the proposed action need not in any way interfere with membership in the Canadian Manufacturers or British Columbia Manufacturers Association. He thought that if all manufacturers in Victoria were

associated on common ground, action could be taken that would be beneficial to themselves and the city as a whole.

In the general discussion which followed duplication of organizations was strongly condemned and the need was voiced for an association thoroughly representative of the city's manufacturing interests. It was decided that the new section of the Board of Trade will meet regularly each month.

One of the first objects of the section is the securing of more Dominion Government orders for local factories, and it is intended to prepare a statement for the Ottawa authorities, pointing out the capabilities of the Island's industrial plants. Concerted action will also be taken towards ensuring the success of the Home Products Fair. Transportation matters will occupy a good deal of the bureau's attention, and in this connection yesterday's meeting came to the conclusion that the general attitude already declared by the Board of Trade should be warmly endorsed.

Uniform Laws in the Prairie Provinces

If Conflicting Provisions in Many of the Acts Passed by the Western Legislatures Were Removed it Would Simplify and Straighten Away Many Difficulties Constantly Arising at the Present Time—Illustrations of Some Divergencies that are Occasioning Trouble

By G. E. WHITE

Chairman, Brandon Section, C. M. A.

LAWS enacted by the Parliaments of the three prairie provinces acting independently could no more be alike than could the minds of the parliamentarians enacting them. There is, of course, a possibility that an Act working well in one province might be brought into force by similar legislation in the other provinces, though improvements and changes that perhaps are impossible to eliminate might bring about differences causing more or less difficulty. It is not known that any rule is laid down whereby provincial Acts may be compared in such a way as to avoid differences, and it may be—unless some other method of securing uniformity than that which exists at present is devised—that a very complicated condition of affairs may arise.

In the prairie provinces conditions are to all intents and purposes the same, and although similar legislation might not apply to the eastern provinces or British Columbia, nearly all Acts that deal efficiently with conditions in either Manitoba, Saskatchewan or Alberta would appropriately fit all three.

The economical and industrial progress of the West shows that there have been no such serious complications as to interfere with the welfare of the country, but a study of the different legal measures, such as the "Farm Implements Act," the "Boilers Act," and many others, tends to prove that there are conflicting provisions which, if rectified, would simplify and straighten away many difficulties that are constantly arising at the present time.

The Farm Implements Act

To illustrate these conflicting conditions—the Farm Implements Act of Alberta allows vendors to sell under their own order form. The Farm Implements Act of Saskatchewan, on the other hand, necessitates special orders—form "A" for new goods and form "C" for second-hand goods. A travelling salesman, if his territory lies in both provinces—and it is often impossible to get away from the arranging of traveller's districts without overlapping—must be versed in the Farm Implements Acts of both provinces, and must carry two order forms for Saskatchewan and one for Alberta. Even should his territory not overlap, it is the policy of many firms, in the case of a poor season in his district, to transfer a traveller to a ground where better crops prevail, which quite likely would be in another province. And it is often the case that a traveller who is a good mechanical expert—and this sort of a man is of great advantage to his customers in helping them out at a difficult time—is not much of a student, and it is impossible for him to grasp the full meaning of the laws in the different provinces, occasioning some misunderstandings and misrepresentations (all done without intention) that often result in after-complications, sometimes of a serious nature, between the customer and the vendor.

Taking as an example one of the simpler Acts, that of "The Ordinance Respecting Hire Receipts and Conditional Sales of Goods," in Alberta; "An Act Respecting Lien Notes

and Conditional Sales of Goods," in Saskatchewan; and "The Act Respecting Lien Notes," in Manitoba, the chart below is set out to illustrate their differences.

Item.	Manitoba.	Saskatchewan.	Alberta.
Method of attaching liens.	Vendor's name on goods at time of sale.	Vendor's name on goods if vendors have an office in Saskatchewan where full information regarding account can be had. If no office in Saskatchewan registration of order form or lien notes.	Registration of lien note or order form, whether with or without an office. Otherwise the same as Saskatchewan.
Time of Registration.	Prohibited.	To protect goods against third parties within 30 days of delivery of goods, if delivered within a registration district other than the one in which documents were registered, or buyer resides, must be registered within 30 days in that district. If goods removed to another district after first delivery, registration must be made within 60 days.	Same as Saskatchewan.
Renewals.	No provision.	Filed within 30 days "Next preceding the expiration of 2 years from the date of registration" showing the amount still owing with principal and interest. Afterwards renewed each year in the same manner.	Same as Saskatchewan.
Penalty.	Every manufacturer, must, on application, show full information regarding balance due. Fined on conviction of neglect or refusal to do so.	Fined for false statement.	
Release of lien.	Receipt from seller automatically releases lien.	Verified receipt can be registered.	Same as Saskatchewan.
Foreclosure.	At option of vendor, subject to purchaser's right against vendor as trustee. If seizure resisted must replevy.	Vendor upon taking possession, must retain goods for 20 days. Redeemable upon payment of amount due. Must be done through Sheriff.	Same as Saskatchewan.

There would be a great many more divergencies in the farm machinery and other Acts (if Manitoba puts the prospective farm machinery legislation through this session, it will make three different Acts), but the simple comparison above will illustrate the point which this article is written to bring out.

If the effect of simplifying the "Act Respecting Lien Notes and Conditional Sales of Goods" into one form applicable throughout the three prairie provinces would be to enable those interested to familiarize themselves with its provisions and remember them so that they could effectually continue their work without reading the Acts over and over, there would be an immense saving of time and money.

The likelihood of conflicting provisions in the more complicated legislation would of course be much greater, and where half a dozen Acts come into play in any business, it is almost impossible for any firm to keep informed sufficiently well to be able to act without the necessary loss of time in studying the respective Acts for themselves, or communicating with their solicitor, each time one of them is involved.

This problem has been studied for a number of years by individual corporations and law societies, but it is not known that a programme has been laid down to devise some plan whereby all laws that are subject to differences may be rendered uniform.

The Montreal Conference

The Canadian Credit Men's Association, working in conjunction with the Canadian Bar Association, succeeded in getting the various provinces to appoint representatives to confer together and meet at a conference held in Montreal on the 2nd day of September, but as far as can be ascertained, the object of the conference was to make uniform certain individual Acts. The Canadian Credit Men's Association have been endeavoring to bring into uniformity the "Bulk Sales Act," which provincial Act they were largely interested in bringing into force. Unfortunately they have been unable, so far, to carry this to a successful conclusion. The proposed Bankruptcy Act was introduced by them, and amended by a special committee at Ottawa, which, being Federal, would not contain any conflicting provisions.

Sir James Aikins, President of the Canadian Bar Association, advises that the conference of Provincial Commissioners on Uniform Laws (Mr. Matthew Wilson, K.C., of Chatham, being corresponding secretary) has for its purpose the uniformity of laws on established legal principles—not to create uniformity where the provinces do not agree, or to initiate new legislation. It would undoubtedly be impossible for any body to create new legislation unless upheld by the province or provinces in which the new legislation is proposed, but Sir James Aikins, it is ventured to suggest, and the province, would uphold legislation that simplifies and better conditions, and would be in sympathy with any movement that would create uniformity of laws to the extent that they could, without conflicting, be worked under by all interested persons.

To sum up, if a great many Acts conflict, and it is the contention of many corporations and associations that they do—evidence of which is set forth by the steps that have been taken to make them uniform—and if conditions would be bettered by the uniformity of all Acts that conflict, to the detriment of progress, now is the time to devise some programme whereby this may be brought about.

The Retail Merchants' Associations; the Credit Men's Association, and many other western bodies and corporations are in sympathy with a movement of this kind. Should the Provincial Grain Growers' Association and the Canadian Manufacturers Association take hold of the matter in conjunction with them, there is a likelihood that uniformity of the laws of the prairie provinces would be brought about, if after careful weighing of the pros and cons by those affected, and by the powers that be, it is decided that the many persons upholding uniformity of conflicting laws are correct in their contentions.

Fourth Soo Lock

Gigantic Undertaking at the American Soo Now Nearly Completed

After two years of construction work, the fourth lock at the Soo is practically ready, and on the day when it begins operations there will be added another "wonder" to the list of "wonders of the world." For they say around Sault Ste. Marie—the shipping men, the engineers and others who know something about big construction jobs, say—that this 1,700-foot lock is one of the greatest achievements ever recorded and that at a later date, when the world returns to ordinary pursuits, this Soo lock will be mentioned in the tourists' guide as one of the "sights" well worth while seeing.

The fourth lock lies just north of its three companion locks, and is nearest St. Mary's Falls. Its total length, as said, is 1,700 feet; between the gates of the lock-chamber it is 1,350 feet long; the width of the lock chamber is 80 feet; the walls are of solid concrete and are 75 feet high; at the bottom they are 26 feet thick and at the top eight feet.

By means of the fourth lock only one lift is necessary to change the level of a vessel from the lower and upper lakes. Six culverts, six by nine feet in dimension, run the length of the lock chamber, just underneath its floor. The water is introduced into and emptied from the lock through these culverts, which have outlets in the floor. There are 18,000 cubic yards of concrete masonry in the construction of the fourth lock, reinforced by 725 tons of steel rods.

More Pittsburghs will spring up because of the iron and copper ores that will be lowered from the level of Lake Superior to the lower lake ports. Millions of bushels of grain will pass from the Northwest through this lock to the seaboard. The northern forests will be borne by water to the shipyards of the East.

Speeding Up Steel Production

Careful Survey of Steel Stocks in the Hands of Manufacturing Consumers is Now Under Way

Every effort is being made to speed up the production of steel. How far these efforts will come to providing all that is required remains to be seen. The problem, says a writer in the *New York Journal of Commerce*, is probably the most difficult one of like importance that ever industry was called upon to solve in America. Similar difficulties, however, have been met and overcome in Europe, and there is an underlying confidence here that the government's requirements will be met, even though the present outlook is anything but propitious. A careful survey of steel stocks in the hands of manufacturing consumers is now under way, presumably to furnish the Washington authorities with data for their guidance in further directing the course of distribution, so that every pound available for war purposes may be forthcoming. The result of this survey may lead to commandeering and redistribution in certain instances, and may work a hardship to certain consumers who with commendable foresight had provided for their future needs. The steel situation has reached a stage where little but the present counts. The future must take care of itself, and, while manufacturing consumers are anxious to have orders for late forward delivery accepted, there does not seem much to be gained by so doing, as everything is guided by the exigencies of the moment. If a manufacturer has important work on hand that is urgently needed, the steel will be forthcoming; if his product can wait, preference is given to some other for which prompt delivery is required. Under the recent survey order, manufacturing consumers of rolled iron and steel are called upon to report their steel holdings down to the pound. Steel and iron producers meanwhile will be called on to further production to the limit of capacity.

Economic Housing of Industrial Workers

When Houses are Badly Constructed Extra Cost of Heating Becomes a Very Serious Factor—Cost of Land with Improvements is of Importance—Many and Considerable Economies are Possible when the Construction of Houses is Undertaken in Quantity

ARTICLE II

By LOUIS SIMPSON

Member of American Electro-Chemical Society, and Industrial Engineer

IN a previous article it has been shown that the rental that it is necessary to charge for a painted clap-boarded house, when costing, including land and improvements, \$2,000, was \$200 per year. It has also been noted that, so far as the industrial worker is concerned, it is necessary, when considering the question of rent, to ascertain whether the house is so constructed that it can be heated at a minimum of expense. It was shown that, with badly constructed houses, the extra cost of heating might amount to as much as \$50 per year.

With a badly constructed house costing \$2,000, the nominal rent would be \$200 per year, but the actual rent would be \$250 per year, or nearly \$5 per week, a rental that is manifestly too high.

The following calculations are instructive:—

Rental of house costing \$1,200, including land and improvements:—

Interest on \$1,200 at 6 per cent.	\$72 00
Depreciation on \$1,000 at 2 per cent.	20 00
Empties on \$1,200 at 1 per cent.	12 00
Insurance on \$800 at $\frac{1}{3}$ of 1 per cent.	2 66
Taxes on \$1,200 at $\frac{1}{2}$ of 1 per cent.	6 00
Repairs	4 33
	<hr/>
	\$117 00

In this case the necessary rental would be slightly less than 10 per cent. of the capital cost. The Government of the Province of Ontario have offered to advance money for the construction of houses, to be occupied by the industrial classes, demanding interest thereupon only at the rate of 5 per cent. It does not appear that the offer has been appreciated as it should have been. The following calculation will explain the benefit that accrues.

Rental of house costing \$1,330, including land and improvements:—

Interest on \$1,330 at 5 per cent.	\$66 50
Depreciation on \$1,130 at 2 per cent.	22 60
Empties on \$1,330 at 1 per cent.	13 30
Insurance on \$930 at $\frac{1}{3}$ of 1 per cent.	3 10
Taxes on \$1,330 at $\frac{1}{2}$ of 1 per cent.	6 65
Repairs	5 00
	<hr/>
	\$117 15

The difference in the rate of interest charged upon the capital outlay makes it possible to expend \$130 more upon the house and yet only charge the same rental, the rental being only 9 per cent. upon the cost of the house, land, etc.

After the question of finance, the cost of the land, with improvements, is next of importance.

What portion of the total sum available per house has to be expended upon land and improvements—and here it should be stated that land should not be built upon unless these improvements are made.

No agricultural land (without buildings) that has no special or unusual value because of unusual fertility or because of the presence of fruit trees growing thereupon, is

worth, in Canada, more than \$100 per acre for quantity. A farm of 100 acres, at \$100 per acre, totals \$10,000. To this must be added the value of farm house and buildings. These may be worth \$5,000 more, making the total \$15,000. To this total should be added 10 per cent. for forced sale, making a gross total of \$16,500 for the 100 acres. It is evident, therefore, that \$175 per acre would be a full price for such lands, etc.

An economical yet sanitary layout gives 128 houses to 10 acres. The cost, therefore, of the unimproved land, including all necessary road allowances, will be only \$14 per house or, including land surveyors' and legal expenses, less than \$20 per house.

The cost of improvements vary within wide limits, depending upon local conditions, upon the quality of the improvements undertaken, and upon how the improvements are made; but under average conditions, it should be possible to make these necessary improvements at the cost of \$200 per house, making a total, for land and improvements, of \$220 per house.

This low cost can only be secured by:—

1. Purchasing the land in quantity, at a reasonable price. Making the improvements and constructing and renting the houses quickly. In fact, dealing in houses "wholesale" and not by "retail."

2. Making only such improvements as are necessary and which have been decided by some central authority as being the most economic. In fact, there is no money available for expenditure upon frills, and the sooner the town planning "milliners" appreciate this cold fact, the better it will be for everyone.

3. Building upon the improved land the maximum number of houses permissible under the improved sanitary conditions found necessary.

Planning the Land

It still remains to be authoritatively determined what is the most economic method of planning land for the erection of houses to be occupied by the industrial classes in Canada. It is true that the Commission of Conservation has published some ideas or schemes of planning, but none are economical, whilst certain contain features that, under the conditions existing in Canada, make their adoption undesirable. The Government of the Province of Ontario would be wise were they to offer a cash prize for the best economic layout for planning 10 or 20 acres of land, under conditions which should be first tabulated.

Many and considerable economies are possible when the construction of houses is undertaken in quantity.

Great Britain and the United States are now realizing the economy of constructing standard ships; a like economy will result from the construction of standard houses.

The writer is strongly in favor of houses erected in rows or terraces. Not only is the cost of such houses less, but the cost of heating and the repairs are less.

Before economic construction can be assured, a number of problems will require to be solved, and it is suggested that

the Government (Dominion or Provincial) take in hand these problems and arrange for their solution, at the hands of experts.

The following is a partial list of these problems:—

1. Should such houses be constructed with or without cellars.
2. The best system for constructing the outside walls, taking into consideration cost, durability, cost of repairs, fire resistance and heat losses.
3. The best system for constructing the inside walls (partition walls).
4. The best system for constructing the roofs.
5. The best system for constructing the ground floor.
6. The best system for constructing the bedroom floor.
7. Size and character of windows.
8. The necessity for some form of double glazing.
9. The necessity for some form of double outside doors.
10. Height of ground floor over street level.
11. Size and arrangement of kitchen.
12. Ventilation.
13. Sanitary conveniences and general sanitation.
14. Trimmings.
15. Minimum height of rooms.

A few dollars saved in each of the above-mentioned items come to a considerable total, and not only a few, but quite a few, dollars may be saved on some of them.

The essentials in such construction are: Elimination as far as may be practicable of risks from destruction by fire (internal and external); elimination of heat losses, reduction in repairs, whether the results of legitimate causes or from improper usage.

It is to be regretted that the action of the Associated Fire Insurance Underwriters has, in the past in Canada, tended to prevent improvements in construction, which, whilst costing money, secured improved fire-resisting conditions. In some cases such improvements were even penalized, the result of conditions, in the past, when the art of fire resistance was not as well understood as it is to-day. It is to be hoped that the Government will take up this question with the Fire Underwriters, with a view of finding a remedy to the present unsatisfactory conditions. This is no work for the manufacturer, whose time is fully occupied in other directions, even if the underwriters were willing to meet the requirements of those who have made the question of losses by fire a study.

The question of the economic housing of Canada's industrial workers can only be solved by the correct solution of all the problems involved, and the Government that secures for the public such solution will be entitled to the thanks of all Canada.

The Box and Crate Industry

Tremendous Increase in the Consumption of Lumber as Result of Shipments to Europe

A solid train of box cars longer than from Chicago to San Francisco would be required to hold all of the lumber which has been used in the manufacture of boxes and crates in the past year and a very substantial portion of this has been used for transporting food and munitions of war to France. This is the statement of John Lind, acting secretary of the National Lumber Manufacturers' Association of the United States.

The statement is made by way of illustrating the tremendous part wood is playing in the winning of victory for the allies as against Prussianism and Kaiser Wilhelm. Many people have rather vague ideas that enormous quantities of food and munitions are going abroad every day in the year. It is not likely, however, that many have realized that to transport this food and these munitions has required the cutting of lumber that would fill 325,000 average box cars.

This, let it be understood, means simply the wood which is used in the manufacture of these boxes and crates and is necessarily packed in as compact a condition as could be well imagined. If the boxes themselves were to be given space in railroad box cars from Chicago to San Francisco, there would be necessary not only one line of box cars, but several lines.

Mr. Lind has reached his estimates on the total consumption of lumber of the cheaper grades for boxes and crates through the annual report as to the amount of this particular timber supplied. Lumber experts place this consumption at six and one-half billion feet per annum, and government reports indicate that the government is using 25 per cent. of this material direct, while a little more than 50 per cent. is going indirectly into the transportation of foods and munitions to France.

A Story of Two Shops

Bonus System of Rewarding Employees May Not Always Work Out to Best Advantage

That the bonus system of rewarding employees for extraordinary output may work disadvantageously at times and that experience and skill, though coupled with years, should not be ignored are among the suggestions of a story of two munitions companies. It is related that in the shops of one of the concerns a bonus system prevails and that under it the greater strength, endurance and facility of movement possessed by the younger men is reflected in their ability to produce more shells and thereby add more to their wage than can the older machinists. Some of the latter, seeing their juniors—usually men of less skill as well as experience—outdo them in the matter of money received, became dissatisfied and sought employment in another plant. When they made application they were heartily received and they entered an establishment where the pay is good but where no bonuses exist.

The plant with the bonus system has a high rate of rejections, the loss of which falls on the company. The men have received their bonuses for the faulty as well as for the good shells. In contrast, in the plant where there is no bonus system there is not the same rush to turn out work and the rejections are very few, so few in fact as to be a matter of wonder. Frantic production has been lacking, and perhaps there has been less of the driving spirit, but the energy used has been properly and efficiently applied, all making for thoroughness and naturally a larger percentage of product acceptable to the inspector. In time past, it is no secret and the same is true to-day in some places—that machine tools have been battered to pieces by mistaken haste, crudely applied force and lack of judgment.

It will not do to generalize too broadly from the two cases cited, but the facts are presented for whatever instruction they may convey to those charged with the responsibilities of shop management.—*Iron Age* (New York).

To Expedite Freight Shipments

A Chicago firm has sent out a notice to its customers, calling attention to the fact that a number of consignments are being held up on account of freight embargoes and express delays. The transportation of troops and their supplies, and the right of way given to government shipments, are taxing railroad facilities to capacity, and all authorities agree that business is facing a period of inconveniences, delays and readjustments. The firm asks the co-operation of its customers by ordering as far ahead as possible; ordering in as large quantities as is fair for a dealer to carry, particularly on staple articles, and by exercising forbearance when delays occur.

Drafting Labor for United States Industry

Radical Programme which has been Introduced by the United States Government for the Purpose of Overcoming a Perilous Shortage of Unskilled Labor in War Industries Due to the Almost Universal Practice of Labor Stealing and Poaching

Oct -

1918

Industrial Canada

By J. B. DENSMORE

Director-General, U.S. Employment Service

ON August 1, the supplying of war industries with common labor in the United States became centralized in the U. S. Employment Service of the Department of Labor, and all independent recruiting of common labor by manufacturers having a payroll of more than one hundred men was diverted to the U. S. Employment Service. This is in accordance with the decision of the War Labor Policies Board, and approved by the President on June 17. (The War Labor Policies Board is composed of representatives of the War, Navy and Agricultural Departments, the Shipping Board and the Emergency Fleet Corporation, the War Industries Board, and the Food, Fuel and Railroad Administrations. Its Chairman is Felix Frankfurter, Assistant to the Secretary of Labor).

Shortage of Unskilled Labor

The above action was found necessary to overcome a perilous shortage of unskilled labor in war industries. This shortage was aggravated by an almost universal practice of labor stealing and poaching.

While the restrictions against private employment of labor apply only to common labor at the present time, these restrictions will, as soon as possible, be extended to include skilled labor. In the meantime, recruiting of skilled labor for war production will be subject to Federal regulations now being prepared.

This drastic change in the labor programme of the United States has been found necessary in order to protect the employer and the employed, to conserve the labor supply of the communities and to cut down unnecessary and expensive labor turn-over (which, in some cases, is as high as 100% a week), and to increase the production of essentials.

While non-essential industries will be drawn upon to supply the necessary labor for war work, the withdrawal will be conducted on an equitable basis in order to protect the individual employer as much as possible.

Thirteen Federal Districts

Under the operating methods adopted, the country has been divided into thirteen Federal districts, each district in charge of a superintendent of the U. S. Employment Service. The States within each district are in turn in charge of a State Director, who has full control of the service within his State.

In each community there has been formed a local community labor board, consisting of a representative of the U. S. Employment Service, a representative of employers and a representative of the employed. This board exercises jurisdiction over recruiting and distributing labor in its locality.

A survey of the labor requirements is being made, and in order that each community may be fully protected, rulings have been issued that no labor shall be transported

out of any community by the U. S. Employment Service without the approval of the State Director; nor shall any labor be removed by the Service from one State to another without the approval of the U. S. Employment Service at Washington. Every effort will be made to discourage any movements from community to community or state to state by any other service.

This labor programme has the approval of all producing departments of the Government, through the War Labor Policies Board.

It must be understood that farm labor will be protected, for the industrial programme distinctly includes special efforts to keep the farmer supplied with labor.

The requirement that unskilled labor must be recruited through the sole agency of the U. S. Employment Service does not at present apply in the following five cases.

1. Labor which is not directly or indirectly solicited.
2. Labor for the railroads.
3. Farm labor—to be recruited in accordance with existing arrangement with Department of Agriculture.
4. Labor for non-war work.
5. Labor for establishments whose maximum force does not exceed one hundred.

When the survey of labor requirements has been made and the aggregate demand for unskilled labor in war work is found, each State will be assigned a quota, representing the common labor to be drawn from among men engaged in non-essential industries in that State.

Plan of Labor Quotas

These State quotas will in turn be distributed among localities. Within each locality, employers in non-war work, including those who are only partially in war work, will be asked to distribute the local quotas from time to time amongst themselves. Quotas by localities and individuals are to be accepted as readily as they are for Liberty Loan and Red Cross campaigns. This plan of labor quotas is a protection for all communities.

The object is to keep any community from being drained of labor, and to use local supply, as far as possible, for local demand. The situation, however, is such that in certain cases some men may have to be transported over long distances.

You will note from the above outline that this is probably the most drastic action that the United States Government has taken since putting the National Army Draft into effect. The absolute necessity for this programme can be seen when it is realized that in Pittsburg, for instance, there are advertisements calling for men to go to Detroit; while in Detroit street cars there are posters asking men to go to Pittsburg. This same condition is apparent all over the United States, and in the consequent shifting of labor a great part of our war effort is dissipated.

New Tariff Regulations

Canadian War Measures—Restricted Imports

In Customs Memorandum 2226B of July 18th, 1918, collectors of customs were instructed not to accept importations without license from countries other than the United States, of numerous commodities. This instruction has been modified by the following further instruction, dated September 24th, 1918, as issued by the Commissioner of Customs to collectors of customs, viz.:

GENERAL LICENSE FOR IMPORT INTO CANADA OF CERTAIN GOODS FROM THE UNITED KINGDOM.

Referring to Memo. No. 2238B concerning Restricted Imports into Canada, the undermentioned goods on the Restricted List are hereby Licensed to be imported from the United Kingdom.

Collectors of Customs in Canada are instructed to accept customs entry accordingly and to quote this authority therefor as "General Import License No. 1."

The goods above referred to are as follows:—

Burlap.
Cotton.
Cotton, manufactures of
Furs and manufactures of.
Glass and Glassware.
Optical Glasses.
Manufactures of Grasses.
Textile and Vegetable Fibres.
Jute.
Oil Cloth and Linoleum for floors.
Wool.
Wool, manufactures of

Silk and Artificial Silk

Under date September 23rd, 1918, the Canada War Trade Board has furnished us with the following advice respecting importations of the foregoing:

Importations of pure silk fabrics are not restricted from any destination. Fabrics of artificial silk come under manufactures of cotton, and general license covering importation of manufactures of cotton from Great Britain only was issued on Saturday, September, 21st, 1918. Importations of artificial silk from countries other than the United States and Great Britain still require a license."

U. S. War Industries Board "Priorities" Circular Number Four

Referring to the rules and regulations governing priority in production as issued by the Priorities Division of the United States War Industries Board (Circular No. 4, July 1st, 1918).

According to a recent ruling of the United States War Board, automatic priority ratings under the foregoing regulations apply only to applications in relation to United States Government contracts, and not to goods for export shipment from the United States. The Canada War Trade Board state that under the circumstances Canadian companies will require to continue to make application as formerly, on Form P.C. No. 15, for priority class ratings against American mills.

These forms may be obtained from the Tariff Department Canadian Manufacturers Association, 1404 Traders Bank Building, Toronto, or direct from the Canada War Trade Board, Ottawa.

The Canada War Trade Board state that materials for munitions usually take Class A rating, but the particular section is decided by the United States Priorities Committee. Under the circumstances it appears the said circular No. 4 is of no particular value to Canadian companies other than to give them a general idea as to what priority class rating they may expect to receive on their applications.

Customs Rulings

Puncturene, manufactured by the Auto Necessities Co., Austin, Minn., used in sealing auto tires and consisting of asbestos fibre, dextrine and other materials, held to be dutiable under tariff item 220 (a), which ruling would also apply to similar preparations when containing more than one substance.

N. R. G. (Energy) laundry tablets from the Farquhar-Moon Manfg. Co., Chicago, Ill., which is invoiced as odorless washing compound (not soap) ruled to be dutiable under tariff item 220 (a).

Glass refills or receptacles, to be placed in Thermos bottles, dutiable under tariff item 326. This cancels ruling in Appraisers' Bulletin No. 327, page 35.

Radiators, imported with tractor attachments and furnished only to supply sufficient cooling when the attachments are placed on an automobile, may be admitted without duty under the terms of the Order-in-Council contained in Memo. 2166 B. This ruling is in effect from 8th February last.

The following decisions have been made by the Board of Customs under the Special War Revenue Act and amendments, viz.:

Declared that the following game cards are not playing cards and are not subject to customs duty or excise war tax as playing cards:

Authors.	In Castle Land.
Lost Heir.	Game of Words.
Dominoes (card).	Shakespeare.
Snap.	Flinch.
Old Maid.	White Squadron.
Big Chief.	Flags.
Peter Codelle.	In the White House.
Uncle Silas at the Fair.	Young Folk's Authors.
Nations.	The Mayflower.
In Dixie Land.	Famous Paintings.
Multiplication and Division.	Yellowstone.
Strange People.	Birds.
Addition and Subtraction.	Fractions.
Poems.	Domestic Animals.
Astronomy.	Wild Animals.
Game of Flowers.	Constructive Geometry.
Illustrated Mythology.	Our National Life.
New Testament Game.	Learn to speak French.

Declared that the following articles are not subject to war tax as jewelry:

Service Pins.	Red Cross Emblems.
Royal Air Force Badges.	Boxing Medals.
Navy League of Canada	Casualty Bars.
(Juvenile Buttons).	Ontario Government Chaf-
The Sunday World, Toronto	feurs Official Number.
(Helper's League Medals).	Badges.
Honorably Discharged	The Associated Kin Mothers
(Soldiers' Buttons).	in Sacrifice Medals.

Declared that the war excise tax is not payable on player pianos or player organs except in respect to the player action installed therein or attached thereto.

Metal spoons declared to be dutiable not as cutlery, but according to material.

Enamelled copper wire declared to be dutiable under tariff item 351. In effect from 1st September, 1918.

Pyorrhodice powder, per sample, manufactured by the Pentinol & Pyorrhocide Company, New York, declared to be dutiable under tariff item 234.

Gibson mills and concentrators (per illustration), declared to be dutiable under tariff item 453.

Continuous feeders (per illustration) for printing presses, declared to be dutiable under tariff item 453, when designed for commercial work on job presses and imported separately from the printing presses.

XXX Preservaline, manufactured by the Preservaline Manufacturing Company, Brooklyn, N.Y., declared to be dutiable under tariff item 220.

Declared that the articles specified in tariff item 638 (a) are not free under this item unless for use exclusively in the manufacture of hats and caps for men or boys.

Italian Regulation of Imports

The United States War Trade Board has issued the following instruction relative to the foregoing:

"For your convenience and guidance, the War Trade Board directs your attention to the following regulations which have been adopted by Italy concerning the regulation of imports:

(1) A decree published by the Italian Government, effective July 1, 1918, forbids the purchase abroad and importation into Italy of any material or product without an import license from the Italian Government.

(2) Applications for licenses to import into Italy any commodity of foreign origin must be filed by the Italian purchaser with the Giunta Tenica Interministeriale, Rome, before the placing of orders abroad.

(3) After licenses to import have been granted by the above body, the orders may be placed abroad. The prospective importers should advise the prospective exporters in the United States the numbers of such import licenses, in order that the latter may designate such numbers in their applications for licenses to export from the United States.

(4) Import licenses issued by the Giunta Tenica Interministeriale are valid for only one shipment, even though such shipment covers only part of the commodities originally licensed for import into Italy.

(5) The Giunta Tenica Interministeriale will cable to the Italian High Commission in Washington the numbers of the import licenses granted, so that such Commission may approve the corresponding applications for export licenses when filed with the War Trade Board."

NOTE.—The Canada War Trade Board state, under date September 26th, 1918, that in future it will adopt the foregoing principle with regard to exports to Italy from Canada.

FOREIGN TRADE OF CANADA

(Comparison 1916, 1917 and 1918.)

IMPORTATIONS.

	Month of August.			Five Months Ending August.		
	1916.	1917.	1918.	1916.	1917.	1918.
Dutiable Goods	\$38,398,579	\$52,966,903	\$46,620,005	\$178,631,967	\$255,437,248	\$229,612,483
Free Goods	33,932,435	38,964,106	33,032,521	143,566,914	218,594,611	183,450,251
Grand Total	\$72,331,014	\$91,931,009	\$79,652,526	\$322,198,881	\$474,031,859	\$413,062,734
Duty collected	\$12,096,555	\$15,171,161	\$13,624,051	\$58,160,063	\$75,699,900	\$69,613,597

EXPORTATIONS.

	Month of August.					
	—1916—	—1917—	—1918—	—1916—	—1917—	—1918—
	Domestic.	Foreign.	Domestic.	Foreign.	Domestic.	Foreign.
The Mine	\$7,636,581	\$33,964	\$7,421,875	\$23,679	\$7,776,231	\$125,854
The Fisheries	1,816,651	697	2,048,215	7,958	2,754,831	59,508
The Forest	6,209,357	185,261	4,700,686	6,228	7,512,141	1,253
Animals and their Produce	11,779,483	171,840	19,463,416	702,827	17,988,859	963,457
Agricultural Products	35,207,729	1,120,486	60,146,810	3,453,559	16,581,308	212,030
Manufactures	33,197,925	563,392	52,236,233	1,777,232	37,228,211	937,234
Miscellaneous	243,302	154,493	370,351	204,276	312,307	350,273
Total Merchandise	\$96,091,028	\$2,230,133	\$146,387,586	\$6,175,759	\$90,153,888	\$2,649,609

EXPORTATIONS.

	Five Months Ending August.					
	—1916—	—1917—	—1918—	—1916—	—1917—	—1918—
	Domestic.	Foreign.	Domestic.	Foreign.	Domestic.	Foreign.
The Mine	\$33,961,496	\$110,289	\$28,961,238	\$112,104	\$33,129,026	\$1,075,558
The Fisheries	7,963,141	9,288	7,277,760	70,861	9,024,463	182,107
The Forest	25,777,811	192,959	23,112,347	31,757	34,772,096	35,217
Animals and their Produce	41,199,174	1,486,681	62,900,080	1,604,593	57,259,810	2,036,140
Agricultural Products	180,977,292	2,606,750	239,997,023	6,585,257	117,518,046	585,263
Manufactures	153,022,063	3,300,702	289,716,536	8,370,008	197,424,052	5,452,620
Miscellaneous	3,535,356	588,262	2,277,276	1,005,799	2,719,321	902,135
Total Merchandise	\$446,436,333	\$8,294,931	\$654,242,260	\$17,780,379	\$451,846,814	\$10,269,040

Correspondence

Uniform Laws Desired

Brandon, September 10, 1918.

Editor, INDUSTRIAL CANADA,

In your August number it was suggested that "IDEAS" are what are required from sections of the C. M. A. Our section have been successful in whatever they undertook, the greatest accomplishment being the installation of a switch between the G. T. P. and the C. P. R. at Forrest.

We now have an "idea" which may be too large for our small section, but with the whole body of the C. M. A. behind us, there would perhaps be a probability of our making some headway in the matter. This is "uniform laws" for the Prairie Provinces.

We mean by this that instead of there being three separate boiler laws for Manitoba, Saskatchewan and Alberta, which necessitates practically three types of boilers being built to work under like conditions, there would be one law embodying the best points of the three boiler laws. It means that instead of there being three Farm Machinery Acts, for the three Provinces, in which the condition of sales, guarantee on goods and the lien law on machinery are different, the best points of them all could be embodied in one. It might mean that in school laws, workmen's compensation acts and to no telling what extent in other legislature, advantages of great importance would be made by their uniformity.

Our reason for writing you is the above mentioned article in your last number, and we would like to have your views on the subject.

Yours very truly,

BRANDON SECTION, CANADIAN MANUFACTURERS
ASSOCIATION

Box 1514.

G. E. WHITE, *Chairman.*

The Bankruptcy Act

Toronto, September 9, 1918.

Editor, INDUSTRIAL CANADA.

Many members of the Canadian Manufacturers Association who read the recent article which appeared in the May issue of INDUSTRIAL CANADA from the pen of Mr. H. MacDonald under the caption of "Proposed Dominion Bankruptcy Act Defects," and who also read the report of the Legislation Committee as presented at the recent Montreal Convention are entirely opposed to the views presented and the suggestions made by both parties concerning the proposed Dominion Bankruptcy Act. It is felt that they are not indicative of the true point of view of Canadian business men, and entirely out of accord with the needs of the country.

Briefly the point of view advanced and commended is that the proposed Bankruptcy Act should be not only Federal in its enactment, but that it should be controlled by Federal authority, through the medium of a new judiciary, a bankruptcy commission, or some such other centralized agency. The Board of Railway Commissioners, the Exemption Tribunal, and the Exchequer Court are submitted as examples of the control commended.

Federal Enactment Desirable

Canadian business men have for a number of years been urging greater uniformity of commercial legislation, and, while there are some who are opposed to any system of bankruptcy, the general opinion is that a Federal enactment would be in the best interests of the commercial community. They are, however, very definitely against any such proposition as centralized control, and for the reasons which we hereinafter endeavor to show.

To begin with Canadian experience of a system of bankruptcy has been most unfortunate, and our commercial interests of the late 70's were so dissatisfied with the Bankruptcy Act of that time that by strenuous agitation they secured its repeal in 1880. The main reasons were—dissatisfaction over administration, costs and expenses, excessive delays and endless red tape.

Since that time insolvency has been conducted through the medium of Assignment Acts passed by the different provinces of the Dominion. Many of these bills are to-day governing and regulating the liquidation of insolvent estates in a most desirable

manner. Others again are so attended by court procedure and red tape that make their operation a most expensive and costly procedure for creditors.

The Jacobs Bill Drawn from Business Standpoint

Realizing the need and desirability of uniformity in this important department of commercial life, and that the British North America Act provided the machinery for Federal power in enactment, the business community turned their attention to preparing a bill which would meet the needs of the country, at the same time eliminating as far as possible court procedure, excessive costs and unnecessary delay and retaining the important feature of the right of a debtor to voluntary assignment. The Canadian Credit Men's Association asked Mr. H. P. Grundy, K.C. of Pitblado, Hoskins & Grundy of Winnipeg to draft such a bill. He did so and later this was submitted for revision to Mr. A. C. McMaster, K.C., of McMaster Montgomery Fleury Co. of Toronto and Mr. E. J. Jackson of McKenzie Brown & Co. of Regina, as well as a number of others. It was also submitted to numerous commercial bodies and secured their very general commendation, and in fact it was very strongly endorsed by the Manitoba Branch of the Canadian Manufacturers Association.

It is urged by some of those to whose views this article is in reply that the British Bankruptcy Act is the natural and proper tendency to be followed in the preparation of any such law for Canada. With this contention we agree, but we conceive it to be a reasonable deduction that we should utilize it as guiding in principle only and not for concrete adoption into our statute books. The British Act may, and no doubt does, meet the needs of the United Kingdom, but who is there that will argue that what is good for that small, heavily-populated, closely-compacted, uniformly-conditioned country, is altogether good for a land the length and breadth of Canada with its sparsely-settled area and widely-diversified interests.

Legislation Committee's Contentions Faulty

The Legislation Committee contend for centralization of control on the premises that if we have a Federal law administered by Provincial Courts we will have a variety instead of uniformity of decisions and practice. This assumption is, we think, quite fallacious. We want a uniform Act for Canada, but it does not follow that we want undeviating uniformity in decisions. This country is made up of so many different provinces that what might be a fair decision in one province would be the very reverse in another, despite the fact that on the surface the problems involved were substantially the same. Furthermore it is the Act that produces uniformity in practice and in decisions, and surely the Provincial judges would be as capable of determining its meaning and interpreting it, as a new Federal judiciary or a bankruptcy commission would be.

Again uniformity of decisions is built upon precedent, and as the proposed act grew in age it would produce that uniformity based on different local conditions, which would guide lawyers in the preparation of their briefs and judges in their decisions. To substantiate this it is only necessary to take into consideration our Criminal Code which is Federally enacted, and municipally and provincially administered, and which produces uniformity governed by local conditions.

Who Will Pay the Expense?

If the aim of the Canadian Manufacturers is to secure uniformity in our existing laws how many of them are willing to do so at an unreasonable or an unjustifiable expense? The Committee's report urges a uniform law in bankruptcy proceedings, but makes it a condition that it shall be administered by a new court or a bankruptcy commission, similar to the Board of Railway Commissioners, the Military Tribunals or the Exchequer Court. Upon whom will the cost of establishing and the maintenance of such a court or commission fall? Unquestionably it will be taxed against the involved estates and ultimately come out of the creditors. Manufacturers who are at times afflicted with having their customers fail should consider this point and remember these facts.

A close study of something over a hundred estates handled in Canada prior and immediately following the declaration of war shows that the gross costs of administration rarely exceeded ten to twenty per cent. of the assets realized, the averages of the cases investigated showing a cost of about fourteen per cent of the amount realized.

The Position of the United States

In urging for a bankruptcy court or commission the Legislation Committee create in our mind the thought that we should find a country whose conditions are much like ours and which has a

bankruptcy act in force. We immediately direct our attention to the United States and what do we find:

- (1) A bankruptcy law framed on the basis of the English Bankruptcy Act.
- (2) A very general hostility to it among many reputable and responsible concerns and individuals, and in many quarters a demand that it be repealed—and why
- (3) For the reason that it entails too much court procedure and legal representation in liquidation proceedings, with consequent heavy costs and unreasonable delays, and because there has grown up about it a class of solicitors whose unfair practices have raised the ire of creditors all over the country.

The National Association of Credit Men, while favorable to the United States Bankruptcy Act, and strong for its retention, admit that its administration through its stipulated processes in the hands of official authority has been very largely an utter failure and a bitter disappointment from the standpoint of financial returns to creditors. To offset its effects they have established bureaus for handling what is termed "friendly adjustments," just to avoid the necessity of creditors being exposed to unreasonable and unnecessary costs where estates become involved, and bankruptcy is the remaining remedy.

Interesting Statistics for Canadians

Without entering into the figures in detail our investigation shows some rather startling facts. We took the three years immediately prior to the war to arrive at our conclusion. In 1911 the total liabilities in all cases of voluntary and involuntary bankruptcy in the United States amounted to \$165,014,725. The value of the accumulated assets coming into the hands of the Courts is not given but the amount realized thereon was \$33,501,672. Our Canadian experience is that in most estates the original assets would be equivalent to at least ninety per cent of the total liabilities so that the realization by bankruptcy officials was not better than approximately twenty-five per cent of inventory value. Of the amount realized secured creditors got their claims in full, \$8,256,918, and unsecured creditors got \$18,676,784, on the direct liability of \$156,757,807. To administer the amount realized the officials received as commissions, attorney's fees, etc., the sum of \$3,129,844, and in addition spent \$3,086,022 on other costs, or a total expense of \$6,215,866, about one-third the amount paid to unsecured creditors, or an average cost of twenty per cent. of the total actual cash handled.

In 1912 the United States reports of bankruptcy show total liabilities of \$170,153,496, and the amount realized from assets for distribution \$38,554,009. Secured creditors got \$8,683,868 in cash, and \$6,748,176 in property, which the Courts did not handle, but allowed. The unsecured creditors got \$16,248,647 on \$154,721,512 worth of direct liability. Court officials got in commissions attorney's fees, etc., \$3,503,888, or better than twenty per cent. of unsecured creditors' dividends, and in addition spent \$3,369,575 in costs of handling, or a total of \$6,873,463 to administer and distribute \$38,554,009 less \$6,748,176 in property allowed, better than forty per cent. of the amount the unsecured creditors got, or approximately twenty-one per cent. of the total actual cash handled.

In 1913 their governmental returns showed liabilities in bankruptcy of \$227,083,214. From the assets the officials realized \$52,571,396. The secured creditors got \$13,728,612 in cash and \$13,122,406 in property, which officials did not administer, while the unsecured creditors got \$15,964,336, leaving the tremendous sum of \$184,277,860 to be written off to bad debts. The court officials and attorneys got commissions, fees, etc., aggregating \$5,009,114 or almost one third of the amount the general creditors got, and in addition spent another \$4,756,913 in administrative costs or a total expense in handling assets which realized \$52,571,396, less \$13,122,406 in property allowed, of \$9,766,027 over sixty per cent. of the amount paid the unsecured creditors, or approximately twenty-five per cent. of the actual cash handled.

Increased Costs Without Justification

Now then, Mr. Unsecured Canadian Manufacturer, faced with an average cost of not over fifteen per cent. of the value of realized assets from the estates in which you may be interested to-day, are you willing to submit to an average cost of from twenty to twenty-five per cent. to get centralization of control through the medium of a new judiciary or a bankruptcy commission? To argue that no such increased cost would be entailed is to belie the facts and the proof. If such a court were established who would pay for its maintenance and support? It would be a tax against the various estates and as few estates pay in full the cost would directly be a charge upon creditors.

Beyond the question of costs altogether the proposition approved by the Legislation Committee, in our opinion, is wrong, and for the reason that in the establishment of a court or commission they introduce officialdom with all its consequent red tape and delay,

and what Canadian business man has not experienced annoyances caused by such bodies. The Jacobs Bill provided that the control of the estate shall be vested in the hands of the parties vitally interested—the debtor and his creditors. Agreeing amicably they can, through the medium of the Inspectors and the Trustee or Assignee, administer the entire estate without the introduction of court officials at any stage.

Voluntary Assignment Right Retained

In addition of many other new features of a Bankruptcy Act this bill preserves to the debtor the right of voluntary assignment, which should be the object of all business men to retain, and at the same time it ensures him a discharge providing there are no infractions of the clauses governing the granting of same as laid down by the Act.

If a debtor will not assign, the Jacobs Bill provides a compulsory clause, whereby a creditor for \$200. or over can apply to a specially designated Provincial Judge for an order in bankruptcy. Once the debtor is adjudged a bankrupt an assignee or trustee is appointed, satisfactory to the creditors or the court, and the creditors through their appointed inspectors proceed to administer the estate in a manner similar to the present procedure under the Ontario Assignment Act. After the estate has been realized upon it is provided that the costs and charges, which for the benefit of both debtor and creditors alike have been scrutinized by interested inspectors, may be submitted to the Registrar or Taxing Officer of the local provincial Court for his approval and finally summing up the evidence presented to him from all sources, including a report from the assignee or trustee, the judge decides upon the right of the bankrupt to a discharge.

What the Recommendations Made Really Mean

To adopt the suggestions of the Legislation Committee, elaborated in Mr. MacDonald's article, would mean the establishment of a National Bankruptcy Court for Canada, with representatives or junior offices, in each of the eight provinces and the Yukon Territory. These would be established and maintained out of the proceeds of the various estates which might go into liquidation, and the costs of maintaining such officialdom, would unquestionably fall upon creditors. It would mean that the power of administering insolvent estates would pass from the control of creditors—directly and vitally interested, into the hands of others neither directly nor vitally interested. It would mean that increased costs would be charged against all estates, (we do not infer that this would be done unfairly, but directly of necessity); that greater delay would result in the closing of them, and there would be the creation of official red tape that would be harmful and injurious to all classes of the commercial community. It might also mean the appointment of political partisans to positions of preferment and work, the nature of which they know nothing, and of which they have no knowledge, and it might mean, as it does in the United States, roguery and trickery of many and most unfortunate kinds. It would mean nothing but less in the way of dividends and more in the way of worry and vexations.

What Canadian Business Really Needs

If our understanding of the desires of financial and commercial men are right, it is our opinion that in a bankruptcy act they want uniform legislation for all of Canada, a bill designed to meet the needs of this vast area of sparsely-settled territory and sufficiently elastic to meet the greatly varied conditions that govern here,—one insolvency act instead of nine—founded on a sound basis of equity rather than law. They want a bill free from the red tape and delay incident to official procedure, one that will leave the administration of the estate in the control of the creditors themselves rather than transfer it to the hands of courts or official appointees, and they want a system that can be operated at a minimum of expense.

After having gone over the Jacobs Bill carefully, we believe that it combines in a remarkable degree the remedy for many evils attendant upon liquidation proceedings to-day, that it will produce uniformity and that with the control in the hands of the creditors, there will be brought to the administration of its provisions that "morale" which has been strongly emphasized as the important factor of the bill.

In our opinion manufacturers cannot afford to neglect this vital question nor can they afford to accept the lead sponsored by the recently retired Legislation Committee of the association. We are not much worried but that if the facts are properly and truly placed before them they will speedily realize the very great advantage that the proposed Dominion Bankruptcy Act of Mr. Jacobs has over any that might be adopted containing the features proposed by the Legislation Committee.

THOMAS W. LEARIE.

Trade Enquiries

These enquiries come into our hands from various sources. The Weekly Bulletin of the Department of Trade and Commerce, from which the enquiries indicated in the sub-heading allotted to them are taken, should be read regularly by those interested in foreign trade. It will be sent free on application to the Department at Ottawa. The names connected with all those enquiries can be furnished direct from the Commercial Intelligence Department, Canadian Manufacturers Association, Toronto.

DOMESTIC TRADE ENQUIRIES

195. **Agency.**—We are in communication with a gentleman in Toronto who is desirous of getting agencies for general merchandise.
196. **Manufacturing Plant.**—A firm in Western Ontario are offering for sale a plant capable of being used for manufacturing, assembling or storing. The property consists of 20 acres, situated near dry docks, shipyards, grain elevators and two railways are accessible to it.
197. **Cost Accountant.**—A correspondent, who has had twelve years' experience in factory cost accounting, wishes to communicate with manufacturers who may require the services of a cost accountant.
198. **Translator and Correspondent.**—A gentleman in Montreal desires to secure a position with a firm where translating and corresponding in French are required.
199. **Lead Washers.**—We are in communication with a company enquiring for lead washers.
200. **Wooden Spoked Wheels.**—An enquirer is asking for the names of firms who can make small wooden spoked wheels, about seven inches in diameter, suitable for toys.

IMPORT TRADE ENQUIRIES

201. **Candelilla Wax.**—A Texas firm is interested in getting into communication with large buyers of candelilla wax.
202. **Hides, Woolled Sheepskins, Goatskins, Divi-divi and Ornamental Woods.**—A New York firm wishes to get in touch with Canadian importers of hides, woolled sheepskins, goatskins, divi-divi and ornamental woods.
203. **Tonga Beans, Cacao Beans and Coffee.**—The above firm desires to hear from Canadian importers of tonga beans (vanilla substitute), cacao beans and coffee.

EXPORT TRADE ENQUIRIES

204. **Household and Builders' Hardware.**—We have an enquiry from a firm in New York who wish to get in touch with Canadian manufacturers of household and builders' hardware.
205. **Hosiery and General Merchandise.**—A new York firm would like to hear from Canadian exporters of hosiery and general merchandise.
206. **Engineering Supplies.**—A firm in London, who claim a thorough knowledge of engineering, and operate on a commission basis, would like to represent Canadian firms.
207. **Aluminum Ware, Enamelled Ware, Musical Instruments, Confectionery, Hosiery, Paper, Etc.**—A firm in New Zealand is interested in representing Canadian manufacturers of aluminum ware, enamelled ware, musical instruments, confectionery, cocoa, hosiery, go-carts and paper.
208. **Norway.**—A sales agent in Christiania is in the market for agricultural machinery, especially mowers and binders.
209. **Agency.**—A correspondent in Montreal, who expects to take a trip through Australia, New Zealand and South Africa shortly, desires to get in touch with Canadian manufacturers who are preparing to obtain their share of export business, either immediately or after the war.

210. **Agency.**—A manufacturers' representative in the British West Indies is interested in representing Canadian manufacturers of flour, portland cement, tea, condensed milk and sulphate of ammonia.
211. **Agency.**—A gentleman in London, who has had considerable selling experience in paper lines, desires to hear from Canadian firms who require the services of an agent in England.
212. **Woodenware, Etc.**—A firm of manufacturers' agents in Dublin would like to receive the names and addresses of manufacturers of knock-down and other kinds of furniture who are interested in developing export trade immediately after the war is over.
213. **Metals and General Merchandise.**—A correspondent in New York wishes to get in touch with Canadian manufacturers of metals and general merchandise, with a view to representing them in Italy, France, etc.
214. **Australia.**—A firm of importers and exporters desire to get in direct touch with a number of Canadian manufacturers of general merchandise who are interested in exporting to Australia.
215. **Agency.**—A Toronto man is leaving shortly for the West Indies, and would like to hear from Canadian manufacturers who desire to be represented there.

EXPORT TRADE ENQUIRIES TAKEN FROM THE WEEKLY BULLETIN OF THE DEPARTMENT OF TRADE AND COMMERCE

216. **Sulphite Pulp.**—A firm of good standing in Tokyo desires to be put in touch with Canadian mills able to export sulphite pulp of good quality to Japan, for both present and future business.
217. **Piano Wire.**—A firm of piano manufacturers in Japan, with a capacity of fifty pianos and one hundred and fifty organs per month, is in the market for some 2,000 pounds of piano wire.
218. **Piano Hammers.**—The above firm also wishes to be put in touch with firms making piano hammers, and would purchase 300 sets as a sample shipment.
219. **Pick Handles.**—A Sheffield firm, who are large importers of pick handles, desire to hear from Canadian exporters, with a view to post-war business.
220. **Wooden Toy Parts.**—A Sheffield toy manufacturer would like to get into communication with Canadian firms in a position to supply the above, especially dowels, balls, wheels, etc., with a view to post-war business.
221. **Boots and Shoes.**—An important London company would be glad to correspond with Canadian manufacturers of leather boots and shoes of good quality and shape, with a view to possible purchases later on.
222. **Wooden Handles.**—A large English firm of handle importers, who state that they hold the principal railway, shipyard and colliery contracts in the United Kingdom for handles, wish to get into communication with Canadian exporters for present or future business. They are in a position to obtain the necessary licenses to import and state that they have recently imported thousands of pounds' worth of handles from the United States.
223. **Fruits and Evaporated Vegetables.**—A London firm would be glad to hear from Canadian producers of fruits and vegetables, also evaporated vegetables, with a view to after-the-war business.
224. **Gardening Implements and Tools.**—A firm of importers, exporters and agents, represented largely in the United Kingdom and France, would be glad to hear from Canadian producers of gardening implements and tools, and to inspect samples, with a view to after-the-war business. Canadian, American and English references.

The Manufacturer's Bookshelf

Cost and Profits

Fundamentals of Cost and Profit Calculation. By Robert S. Denham. Cloth, 124 pages. Price \$1.00. Cleveland. Cost Engineering Publishing Co.

Written with the expressed intention of helping to "throw the searchlight of analysis into those recesses of your business heretofore darkened by the cobwebbed traditions and formulas handed down from the age of the tallow candle, the ox-cart and the quill pen," the author devotes considerable space to bitter attacks upon the old school of public accountants. Whether the average manufacturer will be more interested in this than he was in the recent heated discussion between the osteopaths and allopathists remains to be seen.

On the whole, however, the book is worth more than a casual thought by the business world if for no other reason than to prove the folly of engaging anyone but a specialist to install a Cost System. Some of Mr. Denham's points are exceptionally well scored, and taking into consideration the size of the book he has succeeded in imparting considerable information on the important subject of Cost finding.

A History of Labour

History of Labor in the United States. By John R. Commons and others. Two volumes: Vol. one, pp. xxv, 623; Vol. two, pp. xx., 620. The Macmillan Co. \$6.50.

This is no ordinary history. Most histories in other fields are to-day based on a long line of earlier works, but in respect of the history of labor in America there are scarcely any predecessors of the work before us. A few preparatory studies had been made, of which perhaps the most important was Dr. Ely's *Labor Movement in America*, published in 1886. It is significant that the present monumental work owes much to the inspiration of Dr. Ely and to the unique collection of labor literature which he brought together through many years of devoted and costly effort. But no one individual could adequately undertake the work involved in giving to the world a real history of labor in America, and it was not until a board of collaborators was formed by the aid of the Carnegie Institution of Washington that definite progress could be made. The result of the efforts of this board is the work now published in two large volumes.

The guiding spirit in this work has been Mr. John R. Commons, already well known as a pioneer in this field by his *Documentary History of American Industrial Society* and other important studies. Professor Commons has done something more than merely edit these volumes. He has carefully surveyed the whole field, and sought to make the history, so far as possible, a unity in form and in spirit. If he has not wholly succeeded in this, it is because no work written by collaborators, however well organized, can possess the continuity of narrative which a single mind can impress on a complex material.

The work consists of an introduction by Mr. Commons and six historical parts. It is not possible in a brief review to do more than indicate the main divisions and features of the narrative:

Part I, by David J. Saposs, covers the early developments of labor movements in America, including the origin of trade unions, the rise of the merchant-capitalist and of the cleavage between capital and labor, the beginning of trade unions

and the "conspiracy cases" which followed their activities. Philadelphia appears as the home of the American labor movement, the first strike occurring there in 1786 and the first labor union having been organized there in 1827.

Part II, by Helen L. Sumner, deals with the period from 1827 to 1833, a short but important period for which the historical evidence is much better than for the preceding part. It records the rise and growth in Philadelphia of the Working Men's Party and the confused and unsuccessful struggles of Working Men's Parties in New York City and State. In this period the modern alignment of industrial forces has already taken place.

Part III, by Edward B. Mittelman, records the formation, in the thirties, of city central councils and the first premature attempts to establish national trade unions. It was a period when labor attempted to secure by direct economic action, i.e. through the trade unions, what in the preceding period it had sought to obtain through political action. This attempt also ended in failure and disintegration, with the oncoming of the serious panic and depression of 1837 and the years following.

Part IV, by Henry E. Hoagland, is entitled, none too clearly, Humanitarianism, and deals with the constructive period between 1840 and 1860. In this period "social unrest" found definite expression, and led to various co-operative schemes to a new agrarian movement, to the formation of industrial congresses, and to the beginning of the modern form of trade union, with all the questions, such as that of the "closed shop," which appertain to it.

The second volume covers the period from 1860 to the present day. It consists of two parts, the shorter, by John B. Andrews, dealing admirably with the difficult period of nationalization when the labor movement was crossed by the national issues arising out of the Civil War. It contains two very significant labor developments, the establishment, after various unsuccessful efforts, of national trade unions, in particular of moulders, machinists and blacksmiths, printers, locomotive engineers, cigarmakers, and coopers; and the formation of a political labor party, the National Labor Union, which combined in its programme aims so disparate as the eight-hour day and "greenbackism." These movements ended in disintegration and were brought to a close with the failure of the great strikes of 1877.

Part VI, by Selig Perlman, is the longest in the work, and covers the period of "upheaval and reorganization" since 1876. It is a period of the greatest interest, tracing the diverse fortunes of many movements, from moderate trade unionism to anarchism and syndicalism. In this period there took place one of the most striking occurrences which is to be found in the history of labor in any country, the remarkable rise and fall of the Knights of Labor and their supersession by the A.F.L. The circumstances attending this strange reversal of fortune and policy, and the causes thereof, are fully and carefully discussed. The only weak chapter in this part, and indeed almost in the whole volume, is the last, which attempts too summarily and therefore ineffectively to deal with recent labor developments, from 1896 onwards.

The more one examines this whole work, the more one is impressed with the immense amount of painstaking research which alone has made it possible. It is written in scholarly fashion, but does not lose freshness or readability on that account. It will certainly remain for a long time as the standard work on the subject. One could wish that on account of the close relation of Canadian to American labor it had been possible to include as well the entirely neglected history of the former. A similar work recording the history of labor in Canada would be a valuable aid to the understanding of our own economic situation.

R. M. MACIVER.

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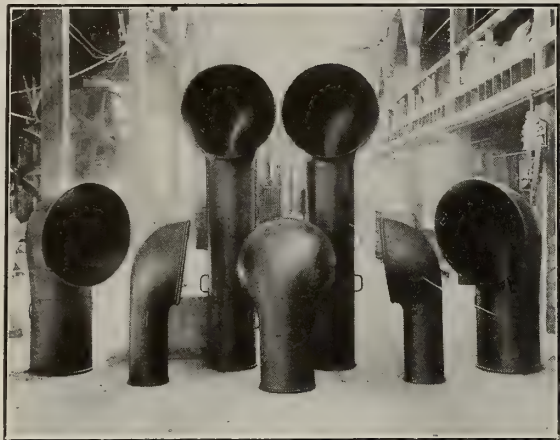
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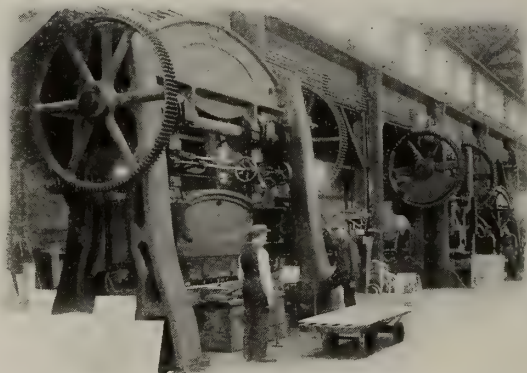
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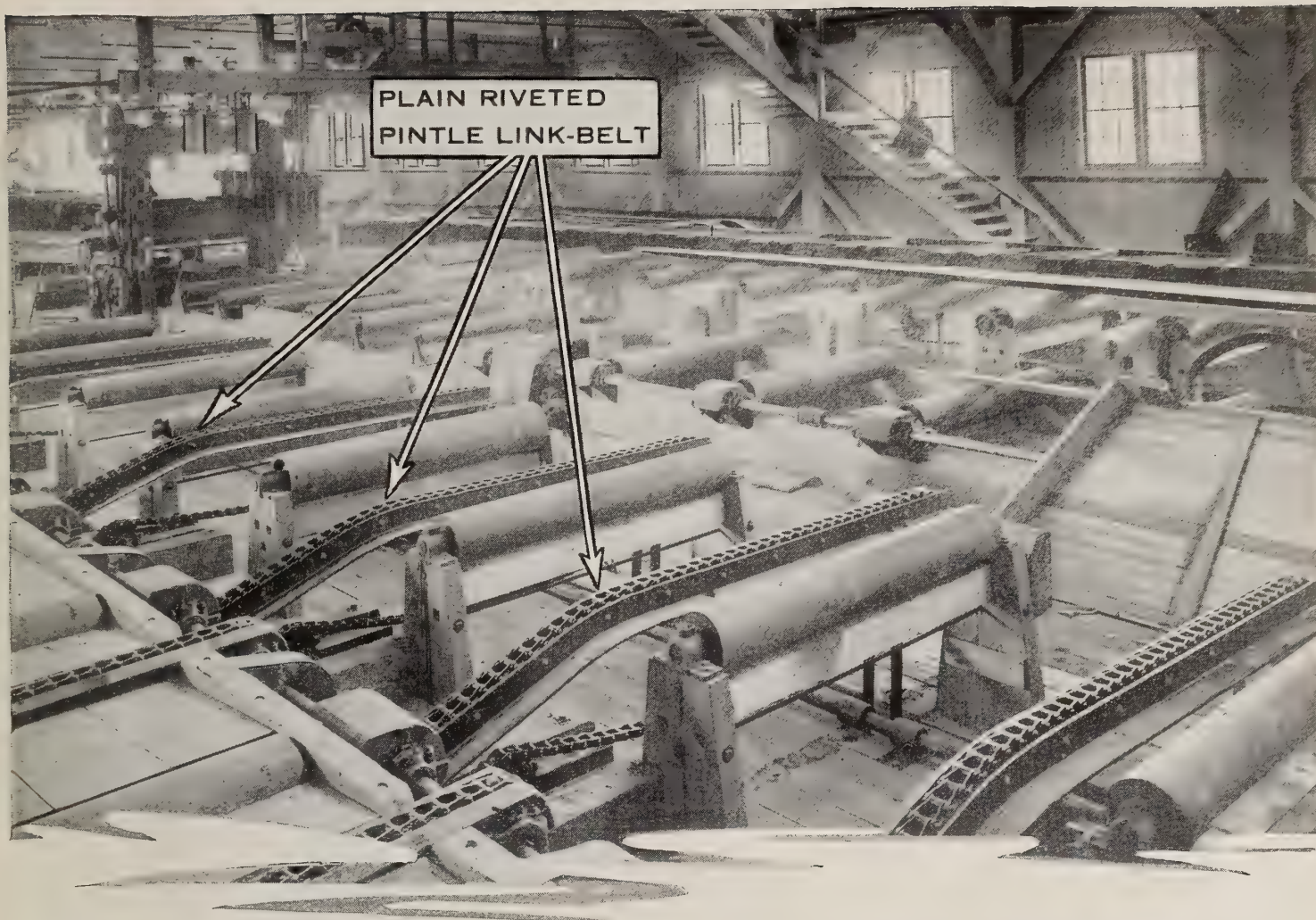
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Canadian Made Link-Belt



EWART DETACHABLE LINK-BELT

A good, strong, reliable form of Link-Belt for light and medium service. Each link is instantly detachable. Adapted to a wide variety of uses.



"H" CLASS SAW MILL PINTLE LINK-BELT

This type has shapes of side bars and end bars designed for saw mill work, with wide surfaces for sliding. Shown in service in mill scene above.

The various kinds of Link-Belt shown on this page represent but a few of the many types made at our Toronto plant by Canadian workmen.

Standard sizes are carried in stock regularly, and can be furnished direct from our Toronto plant. Saves time and eliminates duty charges. Canadian made Link-Belt is of the same tested quality in materials, workmanship and design, which has caused Link-Belt products to be looked upon as the recognized standard throughout the States for over 40 years.

Write us about your conveying, elevating and power transmission problems. Let our engineers help you. Ask for catalogs.

CANADIAN LINK-BELT CO. Ltd.

265 W. Wellington St.

TORONTO

CANADA

Look for this mark
on every link

Trade
Mark

It is a guarantee of
quality and efficiency



"C" CLASS LINK-BELT

This is a combination Malleable and Steel Link-Belt, designed for certain classes of heavy duty service where the use of our higher grade chains may not be warranted. Consists of alternate Malleable Iron center links and Steel Bars coupling them, with pins, usually furnished detachable.



"H" CLASS REFUSE LINK-BELT

Designed for handling general saw mill refuse. Consists of broad malleable iron links connected by long rivets. A very popular Drag Conveyor type.

LINK-BELT

CHAIN FOR EVERY SERVICE

Suppose—

you have 100 employees and an old-fashioned, time-keeping method

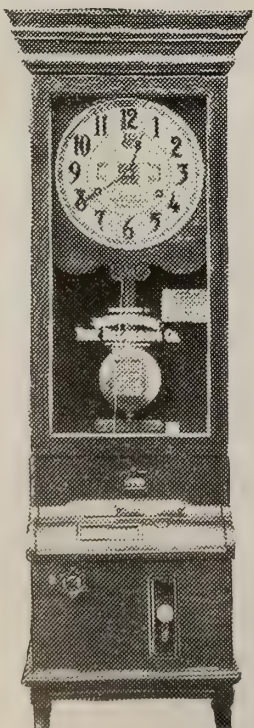
Do you know that in our investigations covering thousands of industrial plants the average loss of time for each employee every time he or she goes in or comes out—usually four times per day—is 2 minutes each time?

This when the time recording system is any one of several old-fashioned plans. Perhaps, you think that is too little to bother about. Let's see. One hundred employees, 8 minutes lost working time every day; 800 minutes daily; 4,400 minutes per week; say 73 hours at 40c, \$29.20 per week or \$1,518.40 per annum.

That's good money enough to buy



International Time Recorders



An International Card Recorder

for THREE establishments with 100 employees each.

Remember, we stand on the fact that our calculations above are MODEST. It will probably interest you, Mr. Executive, to watch the comings and goings of your employees for yourself, one of these times, and you will be surprised how much MORE good working time you are paying for and not getting, than the loss we mention.

Now then—if you do not invest in International Time Recorders it must be because you think we are wrong. We would certainly relish giving you an opportunity to prove your case just as much as we would relish an opportunity to prove ours.

If you are right we lose our time. If we are right you get an opportunity to correct one of the most serious working-time money losses that any plant can encounter.

Time Recording Systems to suit any business has been our life-long study. You will learn something anyhow.

We would value an appointment at your place at your convenience.

International Business Machines Company, Limited

TIME RECORDER DIVISION

FRANK E. MUTTON, Vice-President and General Manager
Royce and Campbell Avenues, Toronto, Ont.

Also Makers of Dayton Automatic Scales and Hollerith Electric Tabulators



*Important service
message to our
thousands of users.*

Do not turn the hands of the clock back when "daylight saving" ends

If you do, you may injure the recording mechanism.

What should you do?

Stop the pendulum—wait one hour and start it again.

Costs nothing—very simple. See that your Office Manager or Superintendent gets this message now, and make sure of the continuous efficiency of your

***Stop the
pendulum,
wait one
hour—then
start it
again!***

International Time Recorder

If you are not an International user, kindly send for our latest pamphlets to-day. They will interest you.

International Business Machines Company, Limited

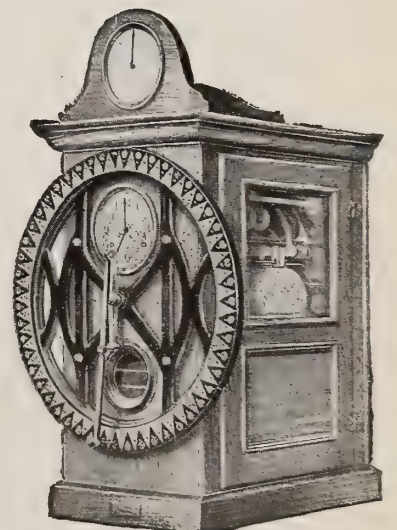
(TIME RECORDER DIVISION)

FRANK E. MUTTON, Vice-President and General Manager

Royce and Campbell Avenues, Toronto

Also at Montreal, Winnipeg, Vancouver

Also Makers of Dayton Automatic Scales and Hollerith Electric Tabulators



A Modern Dial Recorder



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Stretching across the breadth of the Dominion, from Halifax to Vancouver, is a chain of "Office Specialty" Service Stores, each manned by a corps of system experts—men who make filing systems their business and study—who individually possess a wealth of experience gained through contact with hundreds of system problems in every kind of business.

These system experts render you a personalized, on-the-ground service. They come prepared to analyze your present filing or office system. And from this analysis suggest improvements on it (if any are possible). Or, if the present condition of your system warrants it, they will lay before you tentative plans for a complete and more efficient system.

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Backing up and making possible the effectiveness of these centres of system is our central System Department. Into this department constantly filter reports on myriad systems—maybe from Montreal a new Sales Record system installed for a wholesale furrier—or from Hamilton a Cost System worked up for a steel company. Reports of these systems are classified and transmitted to each Service Store in the

hope that they may prove of use and benefit in helping business men in widely separated territories solve similar filing problems.

This service we are rendering is finding great favor. Business men like and appreciate it. And we, too, find that it is mutual and profitable, on the theory that business comes where service starts.

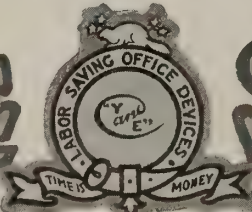
And in these times when more work has to be performed by depleted staffs it is proving of value in more ways than one.

If you can use it—please do. If there's undue pressure of work on your shortened staff, here's maybe the relief you want. Telephone or write to our nearest Service Store for a system representative to call.

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OFFICE  **SPECIALTY**
FILING SYSTEMS

OFFICE AND FINANCE

Canada's War Loans

For the Coming Victory Loan it is Hoped to Get Over a Million Subscribers, this Number Being Necessary if the Objective is to be Raised

Canada, in seeking to raise vast sums by loan for the prosecution of the war, is but following the example of the other warring powers. The custom is as old as war itself. Money is as essential as munitions in war-making. The country that makes war on a sound financial basis is the country that stands to win. There has been criticism of Canada's Government during the war, but relatively little of its war-time finance.

Early in the war Canada, not yet conscious of her own financial strength, sought money elsewhere, chiefly in the United States. As the Republic's loans to Britain and her European Allies increased it was necessary to seek new resources, and these were only to be found at home. The extension of the war through the inclusion of the United States made it necessary to raise all Canada's war loans at home. The first domestic loan, in Nov., 1915, realized \$113,729,500 from 24,862 subscribers, although the banks took \$25,000,000. The second war loan, issued in September, 1916, brought subscriptions of \$201,444,800 from 34,526 subscribers, and included \$50,000,000 from the banks. Six months later, or March, 1917, the third loan was issued. This brought \$260,768,000 from 40,800 subscribers, the banks investing \$60,000,000.

It was now apparent that the country as a whole was ready for fuller participation, and the fourth, or first Victory Loan, in November, 1917, was marked by a greater popular appeal.

Although the Loan call was for \$150,000,000, the subscriptions reached \$419,289,000, representing the investments of 820,035 people. This great success astonished Canada and the financial world generally, and gives heart to those who are undertaking the Victory Loan for 1918. The part of the various Canadian Provinces in the subscriptions was as follows:—

	Population.	Number of Subscribers.	Amount Subscribed.
Alberta	496,000	56,117	\$16,515,150
British Columbia	394,000	50,563	18,814,700
Manitoba	555,000	78,856	32,326,600
New Brunswick	350,000	26,469	10,463,350
Nova Scotia	508,000	39,521	18,588,150
Ontario	2,582,000	363,000	204,185,400
Quebec	2,263,000	126,534	94,287,250
Prince Edward Island ..	93,000	5,300	2,331,350
Saskatchewan	650,000	73,675	21,777,050
	\$7,891,000	\$820,035	\$419,289,000

A little calculation will show that Manitoba headed the list in subscribers, with one in every seven of her population on the list. Ontario was next with one in every 7.1 persons; but Ontario's subscriptions led all Provinces with \$79.08 per capita, compared with \$58.25 in Manitoba. British Columbia, Alberta and Saskatchewan followed with one subscriber in 7.8 and one in 8.8 and one in 8.82, respectively. The average of one in 9.62 for the Dominion was brought down by the four Eastern Provinces.

For the 1918 Victory Loan it is hoped to get over 1,000,000 subscribers. This number is necessary if the desired \$500,000,000 are to be secured. Half a billion dollars would have seemed to be out of the question a year ago, but it is not to-day, for as the war has progressed Canada, in the matter of achievements, has surprised herself. First, her soldiers at

the front surprised the Germans and have kept on surprising them. Then at home, Canada surprised both herself and the world with her production of munitions. The next surprise came last year in the subscription to the Victory Loan. In order to maintain her reputation Canada must now beat last year's loan record by \$90,000,000. No doubt she will do it. She must.

The Loan and the Manufacturer

The Success of the 1918 Victory Loan is Essential to a Continuance of Industrial Activity

The success of the Victory Loan of 1917, was a tremendous boon to Canadian industry. It enabled Canada to finance credits for British war contracts that have brought millions to this country.

For the manufacturer the Victory Loan has continued to give the best export market he ever possessed. Canadian manufacturers during the fiscal year ended 31st March, 1915, exported \$85,000,000 worth of merchandise. That period included nearly eight months of war. For the twelve months ended March, 1918, they have exported over \$636,000,000 worth of merchandise, an increase in three years of \$551,000,000 or 648 per cent. It is interesting to note in connection with these exports, that since the loan was raised approximately \$20,000,000 per month has been advanced to the Imperial Munitions Board at Ottawa for the purchases of Great Britain in this country. There have also been expended approximately \$20,000,000 a month for other war purchases in Canada, including large purchases of farm products. This is a monthly total of \$40,000,000, or during the seven months from December, 1917, to June, 1918, a sum of \$280,000,000.

If this flow of money to the Canadian manufacturer and the Canadian wage earner is to continue, they must support the Victory Loan of 1918, to the full extent of their abilities. Their future well being is at stake.

Prepare to take a big slice of Victory Loan, 1918.

August Bank Statement

For First Time in the History of Canada Savings Deposits Exceed a Billion Dollars

The outstanding features of the monthly statement for August of the chartered banks of the Dominion is again savings deposits, and for the first time in the history of Canada, savings deposits have passed the billion dollar mark, the total being \$1,041,711,865. This is a gain for the month of \$22,696,728 and for the year of \$62,120,044. Compared with the same month two years ago, the increase is nearly \$208,000,000. That these substantial increases in the savings of the Canadian people augur well for the success of the next Victory Loan is quite obvious.

Gain in Demand Deposits

There is also a substantial gain in the demand deposits, the total of \$554,906,517, being an increase of \$5,837,866 for the month, and \$114,911,258 for the year. These deposits are, of course, indicative of the prosperous condition of the manufacturing and mercantile interests of the country. A year ago there was a decrease of nearly \$11,000,000 in the demand deposits.

BANK OF MONTREAL

Established 100 Years (1817-1917)

Capital Paid Up	-	-	\$16,000,000
Rest	-	-	\$16,000,000
Undivided Profits,			\$1,784,979
Total Assets	-		\$426,322,096

SAFETY DEPOSIT BOXES

For the safe-keeping of Victory Bonds, securities and other valuable papers **SAFETY DEPOSIT BOXES** are conveniently located at the **YONGE AND QUEEN STREETS BRANCH.**

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Throughout Canada and Newfoundland
Also at London, England
New York, Chicago and Spokane in the
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A GENERAL BANKING BUSINESS TRANSACTED

ESTABLISHED 1875

IMPERIAL BANK OF CANADA

CAPITAL PAID UP, \$7,000,000 RESERVE FUND, \$7,000,000

WAR SUPPLIES

This Bank is ready to assist merchants and manufacturers to increase their production of war supplies.

When a loan will effect this, consult our local manager.

HEAD OFFICE :

32 WELLINGTON ST. EAST, TORONTO

Branches in all principal centres in Canada

Combining the demand and notice deposits we have a total of \$1,569,618,382, increases of \$28,534,594 and \$177,031,302 for the month and year, respectively. Compared with a year ago, the total shows a gain of \$319,516,420.

A further evidence of the business activity of the Dominion is to be found in the current or commercial loans. These at the end of August were \$920,775,261, showing an increase over July of \$15,098,036, and compared with a year ago a gain of \$84,345,599. Two years ago the current loans were less by about one-half than they were in August last.

Decrease in Call Loans

The attitude of the banks in respect to speculation is reflected in the figures relating to call loans, both at home and abroad. This is particularly manifest in regard to outside loans, which at \$160,544,990 show decreases of \$6,597,846 and \$18,065,635 for the month and year, respectively. In August of 1917 there was an increase of \$26,734,949. Call loans in Canada were \$73,509,571. This was a decrease of \$873,191 for the month, but an increase of \$2,305,220, compared with a year ago.

That there is an abundance of money in the country is shown by the figures covering the note circulation, the total being \$200,839,660, an increase of \$12,973,827 for the month, and of \$44,389,001 for the year. Two years ago the note circulation was \$122,606,083.

Central gold reserve deposits now stand at \$91,470,000, compared with \$53,320,000 and \$20,860,000 in August of 1917 and 1916, respectively.

While there is an increase in both liabilities and assets, the gain of the latter is at a greater ratio. The assets at \$2,423,466,887 gained \$43,954,236 for the month, and \$326,076,225 for the year, while the liabilities at \$2,169,483,583 exceeded those of July by \$41,644,049, and those of August, 1917, by \$321,268,707.

Inter-Allied Bonds

Interesting Suggestion of a Chicago Business Man who
Thinks Such an Issue Would Be of Very Great
Advantage in International Trade

By SAMUEL M. HASTINGS
(From "Manufacturer's News")

The cementing of the Entente Allies into a permanent industrial and commercial union, however fantastic it might have appeared five years ago, now is not only a possibility but a reasonable probability. The industrial and commercial progress centres around financial responsibility. With financial co-operation assured, political unity will follow as the day the night.

The problem of bringing about a status of financial unity has engaged the attention of scores of writers on economic subjects, but so far as known no two of them have agreed upon any feasible method. Each has endeavored to put the interests of his own nation first, thereby imperiling the success of the project.

To bring about such a state of international cohesion as is desired by all the peace-loving peoples of the earth, the first step to be taken must necessarily be of a financial nature, and it must be of such character that the rights of the individual countries will be fully protected. After considering this momentous question from every point of view, the writer has come to the conclusion that a permanent solution could be arrived at by the issuing of joint inter-allied bonds by the United States, Great Britain and its dominions, France, Italy and Japan. Bonds of this description, backed by the resources

of the greatest nations of the earth, would create a condition of absolute confidence in the fiscal stability of the world.

Joint Bond Issue of \$200,000,000,000

The method of procedure would be exceedingly simple. The five nations named could authorize a joint bond issue of \$200,000,000,000, of which amount \$100,000,000,000 could be issued as soon as the necessary international legislation could be completed. Previous issues of bonds by the several nations could be converted into this issue and bring relief to the nations involved who would still have ample bonds left to supply funds for future sale and emergencies. If \$75,000,000,000 worth of international bonds would be issued now, it would leave a balance of more than \$25,000,000,000 in the inter-allied treasuries.

The different countries would be responsible for the proportion of the funds diverted into their treasuries by the sale of the bonds, such sales to be made continuously in all the countries, as long as necessity may require.

Redemption of the Bonds

Naturally a bond of this character would have to be issued for a long period, say one hundred years, redeemable at the rate of one per cent annually, redemption period to begin three years after the close of the war. The interest rate should in no event exceed three and one-half per cent and all the issues should be absolutely non-taxable in all the countries which are parties to the agreement.

There is quite a diversity of opinion on the question of the repayment of debts incurred through the war. Some think that the better way is to raise as much money as possible by current taxation and relieve the burden to be placed upon the shoulders of the coming generation. Experience and good business judgment incline the writer to the belief that the present generation should not bear an undue share of the burdens of this war, but that a legitimate proportion should be paid by those who come after us. Just as a good father works to accumulate a competency for his children, but in the meantime does not neglect to take proper care of the needs of the day, so a nation should look ahead and not overtax the resources of one generation for the benefit of those coming after it. The spirit of patriotism which pervades this country and, as far as we can see, the other countries involved with us in war, is broad enough not to protest against any legitimate system of taxation, but it is plain that if the nation is to increase in efficiency there must be enough money left not to injure the usefulness of those engaged in production, and to make life worth living.

An issue of bonds maturing one hundred years from now would enable the Government to reduce its present taxation fifty per cent annually, thereby affording the relief needed by thousands of manufacturers and millions of salaried men and wage earners who are particularly hit by existing and proposed revenue laws.

The far-reaching effects of an inter-allied bond system could very justly be described as momentous. It would, among other things, bring Japan actively into the family of Occidental nations and unite forever the far east with the west in mutual interests. It would tie the Latin races, France and Italy, to the two great Anglo-Saxon families; it would create a financial partnership indissoluble for at least a century; lead to the establishment of an international navy, an international merchant marine and an equitable international tariff. Through them it could establish a just control of raw materials and cause the enrichment of every nation interested. The effect would be more far-reaching than would be possible under the auspices of the League to Enforce Peace, because the latter's programme is based altogether upon political considerations while this inter-allied bond

THE ROYAL BANK OF CANADA

INCORPORATED 1869

Capital Authorized	-	-	-	-	\$ 25,000,000
Capital Paid Up	-	-	-	-	14,000,000
Reserve and Undivided Profits	-	-	-	-	15,000,000
Total Assets	-	-	-	-	360,000,000

HEAD OFFICE - MONTREAL

SIR HERBERT S. HOLT, President
E. L. PEASE, Vice-President and Managing Director
C. E. NEILL, General Manager

520 Branches in Canada, Newfoundland, West Indies, Central and South America, etc., distributed as follows:

Canada	-	-	-	455	Spain (Barcelona)	-	-	1
Newfoundland	-	-	-	6	U.S.A. (New York)	-	-	1
West Indies	-	-	-	47	Great Britain (London)	-	-	1
Central and South America	-	-	-	9				

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in CANADA, CUBA, BRITISH WEST INDIES, ETC.,
receive careful attention

Banking Service

The attention of manufacturers is drawn to the excellent facilities this Bank offers in all branches of a complete banking service.

A good banking connection is an essential to the success of the manufacturer or merchant.

THE CANADIAN BANK OF COMMERCE

issue would be based upon mutual financial interest; and, when international relations are stripped of all sentimentality, history shows that financial and commercial interests alone bind nations together in permanence.

A Basis for International Currency

While national bonds, as issued now, are salable only in the countries where issued, the inter-allied bonds would find a ready market in all the neutral countries. For example, Argentina which furnishes nitrate to all the nations at war, Brazil which furnishes rubber, Chile which supplies them with tin, would be glad to take pay in inter-allied bonds which could be used by their respective treasuries as a basis for currency. Such a procedure would not only stabilize the money of these and other neutral countries, but it would also restore the parity of the dollar in all neutral and friendly money markets. The inter-allied bonds would be the most substantial currency basis ever established in the history of the world. The fact that the original issue of \$500,000,000 of Anglo-French bonds found a ready market in the United States was due to the stability of the securities deposited by the two Governments with American financial houses. Inter-allied bonds would create an elasticity of credit throughout the commercial world which would do more than anything else to restore immediate and continued prosperity.

Moral Effect of the Plan

The moral effect of such an issue must not be overlooked. It would depress our enemies and exhilarate our allies. Our first aim must be to destroy the autocratic German Government. It is absolutely necessary to the welfare of the human family that existing conditions in Germany be overthrown and that the mind of the German people be disabused of the errors into which it has fallen. In no other sense do

we want to destroy the German people. What good there is in them must be preserved, but their criminal faults must be wiped out.

The adoption of an inter-allied bond system would place the industrial life of Germany at the discretion of the Allies, who would no doubt use this power for the benefit of mankind.

The Co-Insurance Clause

Properties Insured on this Plan Should be Carefully Inventoried on Basis of Present Cost of Replacement—Not Sufficient to Use Inventory of Several Years Ago

In a recent issue of *Factory*, an excellent interpretation of co-insurance from all angles is made by William F. Worcester, secretary of an appraisal company. He explains the reason for co-insurance in the following way: "Suppose a property is divided into four units, and the owners figure that not more than one unit could possibly burn at any time, and therefore only insure on a 25 per cent. basis. This is not fair, as the insurance companies are thereby covering a 100 per cent. property for premiums on 25 per cent. of the total value.

"To encourage the placing of a reasonable proportion of insurance is the principal idea of co-insurance. It may readily be seen that if the establishment mentioned insured up to 80 per cent. on a co-insurance clause, instead of 25 per cent. without co-insurance, the companies could afford to reduce the rate. If more establishments took on this method, the insurance companies could afford to reduce rates still lower, because of the increases of revenues with which to pay losses.

"There are other reasons why the co-insurance clause is favored. It is often desirable that the assured shall carry

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Established 1865

Head Office, Winnipeg

Paid-up Capital.....\$5,000,000

Reserve Fund.....\$3,400,000

Total Assets over.....\$140,000,000

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some proportion of the real possibility. In some instances, therefore, the co-insurance clause operates to encourage the placing of more insurance, and in other cases it may be desirable to hold down the insurance to a certain percentage of the actual value. The insurance companies do not wish to under-insure, nor do they incur liability for more than the property is worth, in event of over-valuation. With this explanation, it will be seen that a general application of the co-insurance clause is fair to all concerned.

The 80 Per Cent. Clause

"The co-insurance clause most ordinarily in use is the 80 per cent.; in fact, many concerns know it only as the "80 per cent. clause," without realizing the extent of its meaning and significance. With the 80 per cent. clause is often found a division of the risk without specific coverage, that is mentioning how much insurance is to be placed on each building and how much on contents, and so on. The 90 per cent. clause is favored on sprinklered properties. The rate is so low and the risk so slight that it is only just to cover more nearly the value. With the 90 per cent. clause is actually found the blanket form of coverage, that is the lump sum (undivided) applicable to the property designated.

"There are occasionally 50, 60, 70 and 100 per cent. co-insurance clauses used, but these are not greatly favored, unless under exceptional cases. For the purpose of this article only the 80 per cent. clause will be considered. The same explanation rearranged would apply to the other percentages.

"Many property owners believe that the 80 per cent. clause on their policy means that they will only get that proportion of settlement in the case of any fire loss. This, of course, is entirely erroneous, as the explanation will show. In some instances the idea seems to prevail that the 80 per cent. clause is not of particular consequence.

"A manufacturer, chief stock-holder in a plant undoubtedly (and admitted to be) worth \$50,000 in present value, requested the writer to explain the co-insurance clause. He said he carried \$30,000 insurance based on a valuation made about nine years ago. The insurance had merely been renewed from year to year. He wanted to know how the 80 per cent. co-insurance clause might come into operation in case of fire. The explanation was necessarily suppositious, as no one knows how or to what extent a fire may occur.

"When the factory manager, with whom the writer was talking, had expressed his understanding of the subject, he raised the question of a small loss, stating that his only experience was with a fire amounting to only about \$500. In this instance no trouble was encountered in securing full settlement, as no mention was made of the co-insurance claim.

"The co-insurance clause is usually accompanied by the "5 per cent. waiver," and it is general practice on a small loss that no valuation of *undamaged* portions be required. The fact that a \$500 loss on a \$50,000 property may have been paid without application of the co-insurance feature does not indicate that a large loss would be settled likewise.

Where Trouble Occurs

"Where the trouble usually occurs is on the serious but not total fire; the partial loss which means the interruption of business. A contractor is called in to figure up the damage to buildings, and he makes his estimate on the cost to repair and rebuild. Meantime prices of similar machines and equipment to replace are ascertained. It is natural, in making up the proof of loss, to use this data at hand in itemizing the damage for the insurance adjusters.

"Suppose the loss figures up at \$20,000, and surely, it is considered, with \$30,000 insurance there should be no trouble in collecting the full amount required to rebuild and replace.

The Merchants Bank of Canada

Head Office, MONTREAL

Established 1864

Paid-up Capital	-	-	-	-	-	\$ 7,000,000
Reserve Funds	-	-	-	-	-	7,421,292
Total Deposits (August, 1918)	-	-	-	-	-	120,000,000
Total Assets (August, 1918)	-	-	-	-	-	153,000,000

President: Sir H. Montagu Allan, C.V.O.

Vice-President: K. W. Blackwell

Managing-Director: E. F. Hebden

General Manager: D. C. Macarow

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Merchants and Manufacturers

are cordially invited to discuss all matters of finance with us.



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SPRUCE" SHEATHING in 36 and
72 INCH ROLLS

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The adjusters arrive. They check over the proof of loss, possibly making certain changes and suggestions, and there is mutual agreement on differences. They may then even O.K. the lists prepared as representing the actual loss sustained. The owners then perhaps expect a cheque in full for the amount. The adjusters, however, have another duty to perform, wherever a serious loss on a co-insurance clause occurs.

"Before any final settlement they will undoubtedly go over the balance of the plant, the part untouched by fire, requiring a valuation of it where the loss is more than 5 per cent. of the total insurance carried. On actual cash value, *probably based on the same scale of prices used in the proof of loss*, they figure up the undamaged portions and perhaps demonstrate the undisputable fact that it amounts to, say, \$30,000 in round numbers. Adding the loss, \$20,000, makes a total of \$50,000, on which should have been carried \$40,000 insurance to meet the requirements of the 80 per cent. clause

"Only \$30,000 was carried, and therefore it is perfectly proper to pay only three-fourths of the loss proved. The owners are co-insurers with the companies to the extent of the difference. In this illustration insurance will pay \$15,000, while the difference is \$5,000, which loss is stood by the owners in their proportion."

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"The only sure way," says Mr. Worcester, "of avoiding even the possibility of becoming a co-insurer in the event of fire is to know the plant values. Place the percentage required by the co-insurance clause accurately on the actual cash value of the property, as agreed when the reduced rate is accepted.

"When the 80 per cent. clause is placed on the basis of correct and reasonably up-to-date appraisal, it is as safe as any other insurance. In the event of fire there is documentary evidence, not merely what the owners might state as the valuation, but disinterested, certified detail and recapitulation, showing the property, where and how located, and also the actual value. An appraisal can be revised every year or two at small expense."

"Yours for Victory Loan, 1918"

Every Business Man in Canada is Asked to Sign His Letters in This Way Next Month

"Yours for Victory Loan, 1918," is the Canadian business men's slogan in the Victory Loan campaign. Every one of them is asked to sign his letters in this way. Already some are doing it, and before the campaign is far under way it is hoped the practice will be general. It is an easy and yet most effective way of driving home the appeal for the Loan, and it will reach practically every business man. They all read their letters, and so during the next five weeks they will confront "Yours for the Victory Loan, 1918," a score of times per day. Start now signing your letters in this way. Get into the swing! Every little bit is needed if Canada is to "go over the top."

Interswitching Order Postponed

The Board of Railway Commissioners have issued a general order, postponing until November 1 general order No. 230, dated May 17, in the matter of the interswitching of freight traffic, and general order No. 243, dated July 25, postponing the effective date of order No. 230 until October 1. This action has been taken by the Board upon reading what was filed by the Canadian Manufacturers Association, and upon its request for further postponement of the effective date of the interswitching order.

Condensed Advertising

FOR SALE

Steam Engines.—1 B.F. Sturtevant 8" x 12" horizontal left hand slide valve engine, with 60" x 17" solid band wheel. Cast iron sub-base, 14" high. Waterous 3" governor. Pressure 100 lbs. per sq. inch.

1 Robb Armstrong Mfg. Co. 9" x 10" horizontal centre crank automatic engine. Sweet governor, 36" x 9" band wheel, 36" x 9" fly wheel. Iron sub-base 16" high. Pressure 100 lbs. per sq. inch.

1 The Laurie Engine Works 18" x 34" x 42" cross compound condenser engine, with receiver, 16' 0" x 50" band wheel in halves. The Northey Mfg. Co. 10" x 15" x 15" independent air pump and condensator. Pressure 100 lbs. per sq. inch.

1 The Laurie Engine Works 18" x 46" horizontal Corliss engine. Girder frame, double eccentric 16' 0" x 50" band wheel in halves. Pressure 100 lbs. per sq. inch.

1 Buckeye Engine Co. 16" x 24" horizontal right hand engine. Shaft governor 8' 0" x 18" band wheel. Steam pressure 100 lbs. per sq. inch.—The Riordon Pulp & Paper Co., Ltd., Hawkesbury, Ont., Canada.

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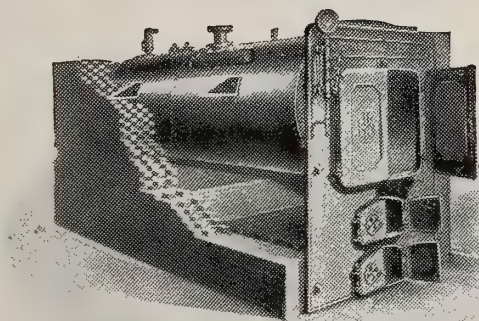
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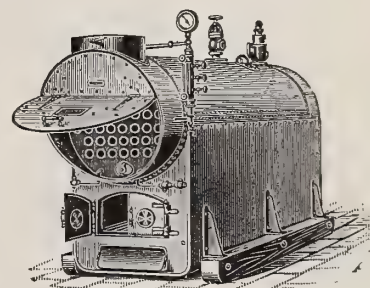
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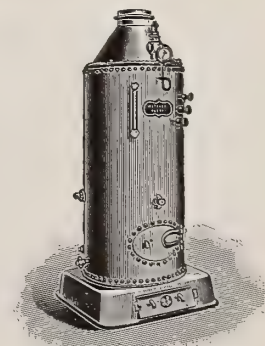
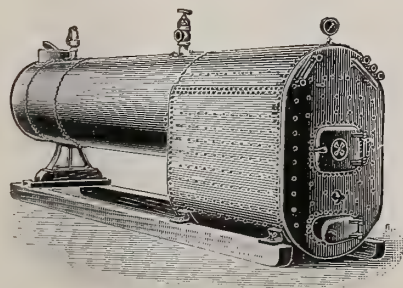


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Good Things from Other Magazines

No More German-Made Goods for Canadians

Personal Honor Demands that the Purchase of Articles "Made in Germany" Shall Not be Resumed after the War—Each Hideous Inhuman Atrocity Inflicted by the Huns Can be Matched with Some Article in which Germany and Austria did Business all Round the World before the War

By ROY F. SOULE

(Reprinted from the "Hardware Age")

[The following article giving a graphic account of German frightfulness, and linking it up with German industry and commerce, is published in "Industrial Canada" by special request of a prominent member of the Association. He asks readers to substitute the word Canadian for American throughout, and then take the message of the article seriously to heart. It is one of the strongest things yet written on the business aspect of the post-war period.]

THE other night one of General Pershing's boys went out into No Man's Land. He didn't come back. Three hours later a searching party went out to find him. That boy had been killed and his body hacked to bits. His comrades gathered up the remains and brought them back in a sack. That brave young American was chopped to pieces with German cutlery. Before the war we bought two million dollars' worth of German pocket cutlery each year.

In the past three years American factories have vastly increased their output of pocket knives. Patterns have been simplified; quality has been improved; an American industry has been encouraged and developed; "Made in Germany" on a knife blade carried in an American pocket has become but a distasteful memory.

Shall we be customers of these blood-stained butchers after the war? I hardly think so, but it is up to you, Mr. Buyer.

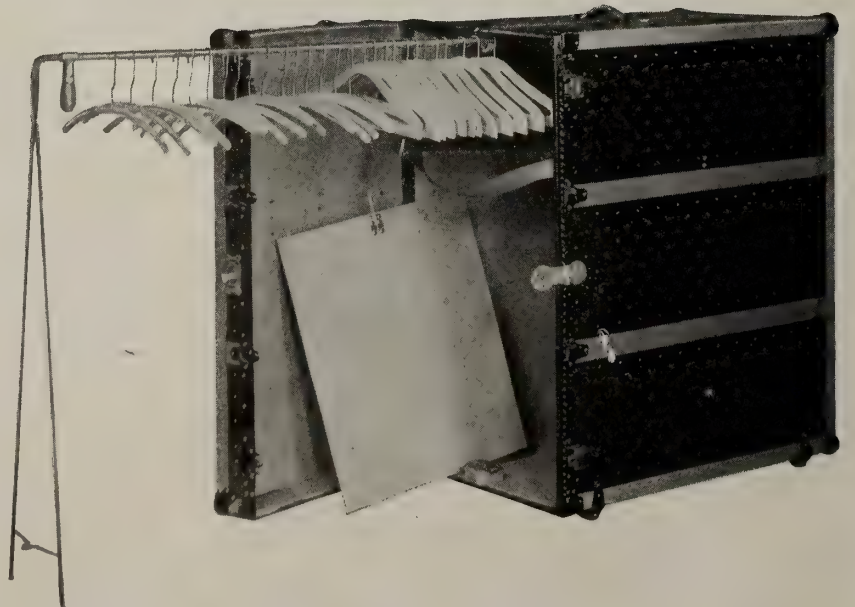
A captured British officer was recently found with his throat cut from ear to ear. This brutal job had been done with a very keen-edged instrument. It was not the work of a trench knife. The ghastly wound looked as though it had been made with a razor. It probably was. Before the

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WELFARE KITCHENS—McClary's

The well-equipped and well-managed plant kitchen is the cornerstone of all the improvements brought about by that great modern movement—Industrial Welfare. And most reasonable is it that this should be so, since upon the proper rebuilding of the daily wear and tear on his body, depends, primarily, man's physical, mental—aye, and sometimes his spiritual—well-being.

The views shown on this page are two of one of our two Welfare Kitchens in our home—London—manufacturing plants.

In these kitchens, complete hot meals, hot supplements to home packed lunches, such as soup, baked beans, hot milk, beef extract drinks, tea, coffee, etc., or quick lunches, are procurable every working day in the year. They are prepared from selected and most wholesome of fresh supplies, and served to workman at absolute cost.

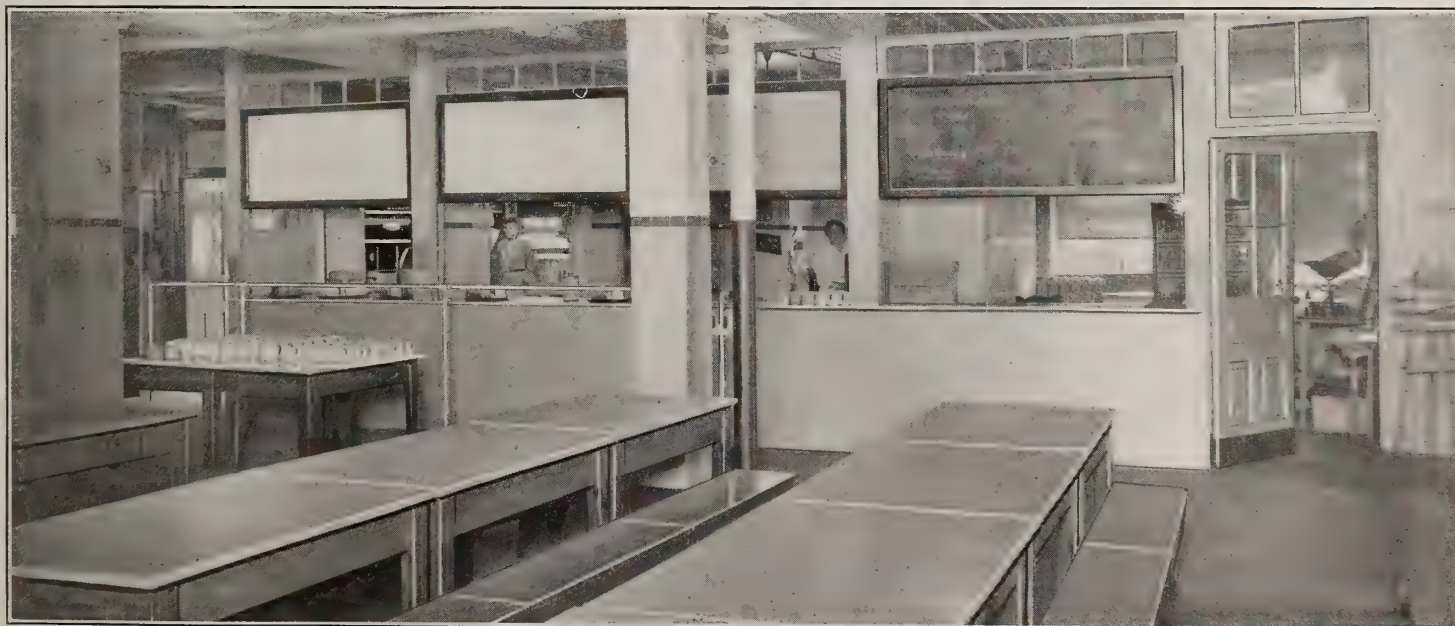
When you are ready to instal a man power re-creating Welfare Kitchen in **your** factory, remember that our skill in building kitchen equipments, as well as our experience in welfare work, are at your disposal.

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Estimates of cost and suggested layouts for Hotel or Institution Kitchens submitted upon request.



war we imported annually half-a-million dollars' worth of razors from Germany.

Since the war began razor factories in the United States have enjoyed a greatly increased business. Their employees are well paid, contented Americans. This industry must be perpetuated. German competition in the days to come should suffer a handicap in proportion to German crimes of to-day.

When the dove of peace lights in the pool of blood, shall we go on buying German razors? It doesn't seem possible, but, Mr. Buyer, it's up to you.

German Shears and Scissors

Two Canadian Red Cross Nurses outraged. Their hands chopped off, and their tongues cut out that they might never tell the hideous story of the frightful wrongs perpetrated upon them. In America hundreds of thousands of Red Cross Workers are using shears and scissors to make bandages. Before the war we bought 600,000 dozen shears and scissors from the Central Powers annually. American factories making scissors and shears are busy places now, and they are making very good scissors and shears. After the war, German or American? Mr. Buyer, it's up to you.

Belgium, poor, brave, outraged little Belgium! When Germany threw to the winds a treaty she termed a "scrap of paper," she not only shredded her honor, but tore to bits business contracts that will never be pasted together again. America has fed starving Belgium. We fed, and clothed and cared for her suffering people long before we became her proud ally on the battlefields. Thousands of orphan Belgian and French children have been adopted into American homes. In the days to come are we going to force these children to play with German-made toys? God forbid! American toy manufacturers have stripped us of the last

vestige of an excuse for the purchase of toys from the Huns. Our factories are making more toys than we ever imported, and they are not the flimsy jim-cracks we formerly bought from abroad. They are largely exercise toys which develop the child's body, or mechanical or structural toys which train the mind. Before the war we imported eight million dollars' worth of toys from the Central Powers. Who will make our kiddies' toys in the days to come? Once more Mr. Buyer, it's up to you.

Not long since the Llandovery Castle, a Red Cross Hospital ship was sunk by a German submarine. That great ship was fully equipped to care for wounded, suffering soldiers. Its only passengers were doctors and nurses. It was marked with a great Red Cross made of red electric lights. The sides of that ship were illuminated, showing for miles away the character of the vessel. There was no possible chance of mistaking the Llandovery Castle for anything but a hospital ship. And damn them, they deliberately torpedoed that ship and took American doctors from open life boats and abused them. The shock of this distinctly brutish act was a little softened by the fact that we have been pretty well trained to expect such atrocities from the Austrians and Germans, who have deliberately shot our doctors, outraged our nurses, bombed our hospitals and destroyed our hospital ships. It is Kultur spelled with a "K."

Surgical Instruments

Before the war we imported from the Central Powers practically every surgical instrument used in America, not because we couldn't make them, but because the volume of such business was comparatively small and the Germans made a speciality of hand-made surgical tools. The other day in Washington I saw the set of surgical instruments

THE CANADIAN APPRAISAL COMPANY

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"Canadian" Appraisals furnish a reliable foundation for any cost finding system by determining the correct values and investments for the departmental divisions or productive units of a plant and the periodical depreciation charges against the respective departments or units.

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**Plain Rounds and Squares
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Service

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adopted by the medical chief of our army. Practically every instrument could be readily made by any of our plier manufacturers and the orders are running into such quantities that they will be stamped out as are American-made pliers. In the days to come will those American surgeons who are seeing and caring for the thousands of victims of Hun atrocities ever permit themselves to forget sufficiently to purchase a surgical instrument made in Germany? Never! The memory of those doctors and nurses who lost their lives in the Llandovery Castle murder cry in protest even against the thought. The Germans may ship their instruments over here without identifying marks? Not if true Americans are in the purchasing department. Is Germany's surgical instrument business dead in America? Mr. Buyer, it's up to you.

Kitchen Enameledware

Say, loyal American, how would you have liked to have your wife in the town of Gembloux when it was captured by the Germans? Scores of innocent people were butchered there. The raping of women and young girls was common and continuous. One young woman was outraged by several soldiers, stripped naked and fastened to the door of her own home by a cutlass driven through her chest with sufficient force to hold the body to the heavy panels. Her breasts were brutally cut off, and with her head hanging and her hair flying in the wind, the body of that poor young martyr stiffened in death. Horrible, yes, more hideous than the Indian massacres that caused our pioneers to shudder in the early days of the West. Brutal and beastly. You may well thank God that your loved ones were not in Gembloux.

Before the war we imported annually millions of dollars' worth of kitchen enamelled ware from Germany and Austria. These utensils were used in the kitchens of American homes.

There was probably some of that same ware in the kitchen back of that blood-stained door in Gembloux.

Before the war American manufacturers had made great strides in the manufacture of enamelled wares. Their goods were favorably known in every state in the Union, yet in almost every American town there was a line of heavy-coated colored wares and of white enameled wares that came from the Central Powers. The blockade against their shipping quickly broke these foreign-made stocks, and the odds and ends were cleared up with special sales. Complete lines of enameled wares made in our factories have replaced them. Will German and Austrian enameled wares go on to our shelves again when the Kaiser and his Prussian war maniacs are whipped? Will we swallow the story that all the Germans were forced into these atrocities with absolute proof that the Bavarians worked single-handed and in apparent glee at many of these hellish outrages? It would seem that a good American would starve rather than foul his lips with food from a German utensil. That's the way it looks, but after all it's up to one single class of Americans, over whose doors are lettered the big word, BUYER.

Millions of Post Cards

Postal cards. We have used millions of them to say a brief hello to the folks at home when we were on the road. Postal card holiday greetings, postal birthday congratulations, postal cards that could be written quickly and mailed with ease when pleasure or business, magnet-like, speeded the use we made of our time. For the past three years postal cards have frequently told brief stories so direct in their wording that the full shock of their horror equalled or excelled those telegrams from the War Department which are bringing home to us the price we are paying for democracy.

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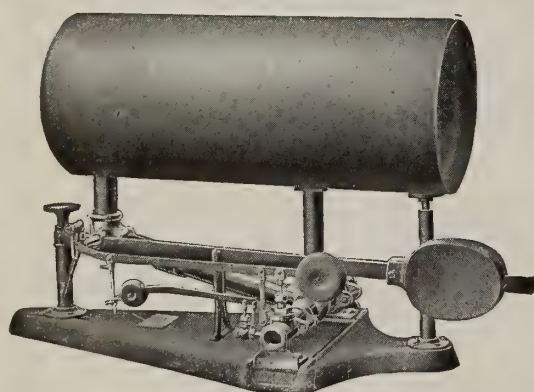
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Write for particulars affecting your case to-day. Our engineering service is at your disposal.

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Woodstock Dept. "K" Ontario

Imagine a postal card telling that your son had lost his third finger, deliberately cut from his hand that a Hun might become possessed of the ring he wore.

Picture the postal that told you of the burning of the lunatic asylum at Obourg, Belgium, and the frightful death of the two hundred insane women who were being cared for in that institution.

Read the postal that might truthfully tell of that French woman eighty years of age who was raped at Lahoussoye.

Another mail and the postal that tells of the women and children at Mons who were forced to march on their own soldiers, acting as a screen for the German troops. Read that the fifty who refused to go on were bayonnetted. You might receive fifty postals, each telling of similar acts which can be verified. Read and then calm yourself to the statistics that inform you that before the war we purchased souvenir post cards and lithographs from Germany to the amount of nearly two million dollars annually.

Do it again? Surely not while we are in our right minds. Sign our names to a postal card made in that empire of rape? My God, no, and that we may never be tricked into unconscious violation of this just resolve. Mr. Buyer, it's up to you.

The Story of a Watch

In a little French village well within hearing of the incessant boom of the Kaiser's cannon, Isaac Marcossan, that great American writer, applied for lodging one night at the cottage of an old French woman. She greeted him courteously, but before she asked him to sit down took him to the side of her fireplace and pointed to the wall. Pinned to a little French flag were three little metal tags with the identification numbers of her three sons. Below each tag was pinned the French Croix de Guerre. As Marcossan stood at salute, paying his silent tribute to the immortal dead, and to this brave old lady's supreme sacrifice, she took from the mantel a French wrist watch. Her last boy had worn it until a German grenade had ended his brave effort to stem the unprovoked invasion of the land he loved better than life. One of his comrades had taken that watch from his wrist, wound it up and sent it back to the old mother in the village back of the Marne. It was still running when it was put into her trembling hands. To her the ticking of that watch, said Marcossan, is the beating of that boy's heart, and as it registers the passing of time, it is also registering the passing of a cursed power that had been allowed for half a century to prepare colossally for the brutal domination of the world. Is this just another story to tug at your heart strings? You be the judge. Before Germany and Austria turned loose their hellish hordes, we imported annually from them over a million dollars' worth of clocks and watches.

Millions of graves have been filled with brave young men who were alive, happy and ambitious three years ago. The wrist watches of many of those boys have come back with their little tin tags. There is no necessity for us to buy time pieces from these people who have so titanically and treacherously caused the death of the flower of this century's manhood. There are plenty of good clocks and watches manufactured right here at home, and in the days to come keep that in mind. Mr. Buyer, you are going into the front-line trenches to protect us from such merchandise. In the name of that old French mother, "watch your step."

"Music, that sublime art which affects the passions by sound. Few who have not felt its charms and acknowledged its expressions to be intelligible to the heart."

Music outraged. Raise the curtain of Kultur ever so little and peek at those villages of France and Belgium occupied by the invaders. Before your ever-widening, horror-

NATIONAL TRUCKS

For National Efficiency

THE efficiency of anything—including motor trucks—means greatest service at lowest cost. Not price, but cost—total, final cost—the difference when the balance is struck between “service rendered” and all those things that make up “expense,” including wasted time.

Our desire is to sell Canadian manufacturers and merchants the proper truck for their particular need—the motor truck that will render the most efficient service—that will actually cost the least—price, durability and

general satisfaction all considered.

Ask any National Driver about the pulling power of his truck—about its all round performance—hear him enthuse.

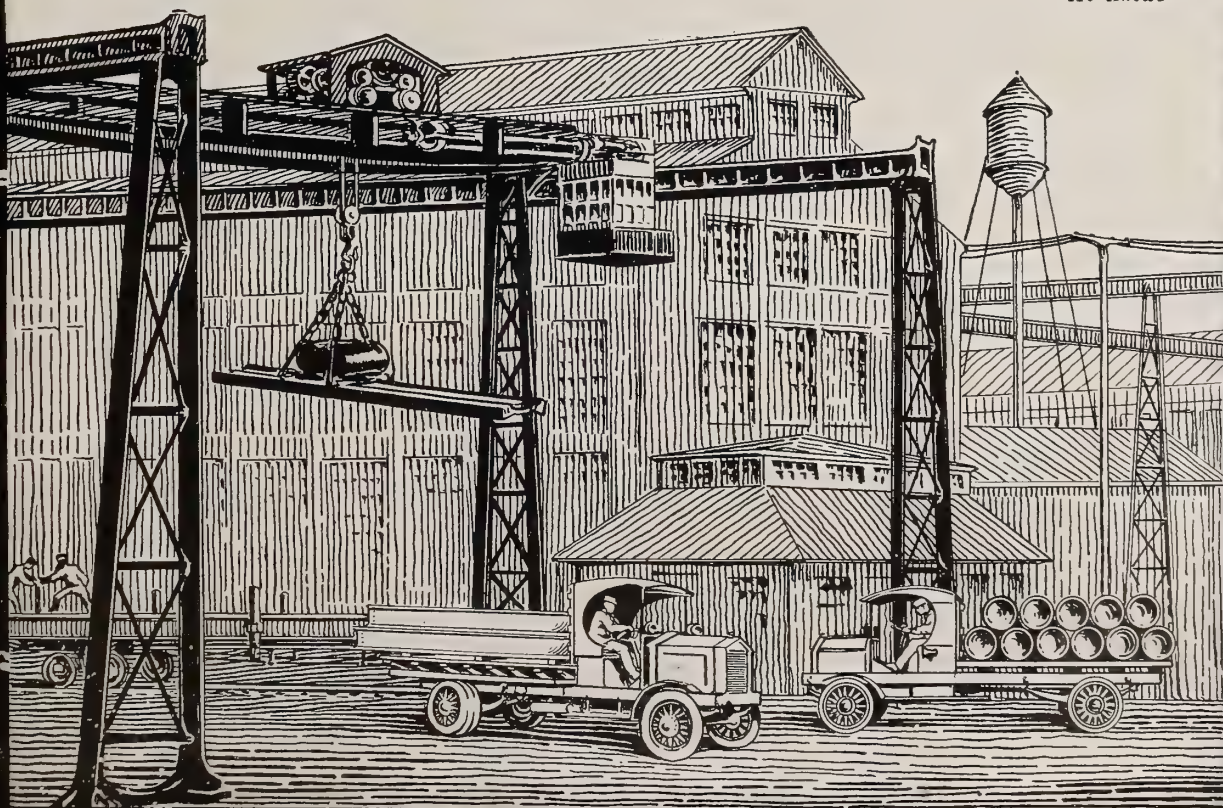
National Trucks not only excel in pulling power, but they are easier to care for. All repair parts are quickly obtainable from our dealers or from our factory in Hamilton without the bother of paying duty and without annoying and costly delays.

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NATIONAL STEEL CAR COMPANY, Limited

HAMILTON, ONTARIO

*“Ask the
Driver—
He Knows”*



struck eyes is an unearthly panorama of encouraged lust. Villages burning everywhere, the streets strewn with the viciously flung bodies of the helpless inhabitants. From a house before you come the terrified shrieks of a young girl who is being outraged. Suddenly the door of this house is burst open and an old man is hurled into the street. It is the grandfather of the girl whose screams make your blood run cold. He is seventy-five years of age, and has gone to her rescue. As the forcefully impelled body of that courageous old gentleman strikes on the cobble stones the crowd of half-drunk soldiers, on whose belts you see inscribed, "Gott is with us," begin jumping with fiendish glee upon him. Their heavy, hob-nailed marching boots quickly reduce his frail old body to a battered, bloody mass.

No More Musical Instruments

No, Mr. American, these are not hallucinations of your own imagining. They are actually sights made hideously clear by burning buildings which are being wantonly destroyed. Then you see a load of straw on a quaint two-wheeled cart coming down the street. It is stopped. Oil is thrown over it, and in its highly inflammable state the willing hands of the Huns throw it into a cellar where a large number of women and children have taken refuge. And then, merciful God, a laughing soldier of Wilhelm, the Brute of Berlin, scratches a German-made match, and one more absolutely inhuman atrocity has blotched the historical page of a couple of nations whose thin veneer of civilization has been scraped away in a war that is but a few days old. Where? Well, the name of the town was Charleroi.

And from up the street came the sound of outraged music from stolen gramophones, accordions and a pianola. The officers were singing. A musical entertainment in celebration of a victory.

Before the war musical instruments, gramophone motors, player pianos: yes we bought a lot of them from these twin nations of rapine. After the war. In the name of the angels who sing saddened music in heaven as they look down upon music outraged, no more musical instruments from Germany and Austria. Stop it, Mr. Buyer. Stop it for all time. We have the right to expect it of you.

You may well dread to go on reading this, but the straight, plain, horrible truths that have come to us fully verified have been kept out of print long enough. It is high time all our people knew them.

At Merlant the soldiers of Germany amused themselves as might the arch fiends of Hell. Their last act in the neighboring village of Etre'py was to club to death an old woman eighty-three years of age. That particular group of soldiers seemed to be possessed of an inhuman desire to kill old people. They signalized their arrival in Merlant by tying an old man of seventy to the tail of a horse which they beat into a frenzy of terror before they turned it loose to drag the old man to death.

Barbed Wire

And the barbed wire of No Man's Land separates us from those soldiers. Over two hundred miles of such entanglements on the Western Front. Recently the Kaiser's factories put out a new wire containing a lot more carbon than had been previously used in the manufacture of such product. There wasn't a single-handed plier in the American army that would cut it. Word of the improvement came to us in America with samples of the wire our Sammies had obtained with bolt cutters. The problem was put up to twenty-six patriotic plier manufacturers who met in New York with a well-known young army officer. Every manufacturer present threw his patents on the table and said to the others,

Nova Scotia Steel & Coal Co. LIMITED

PLATES

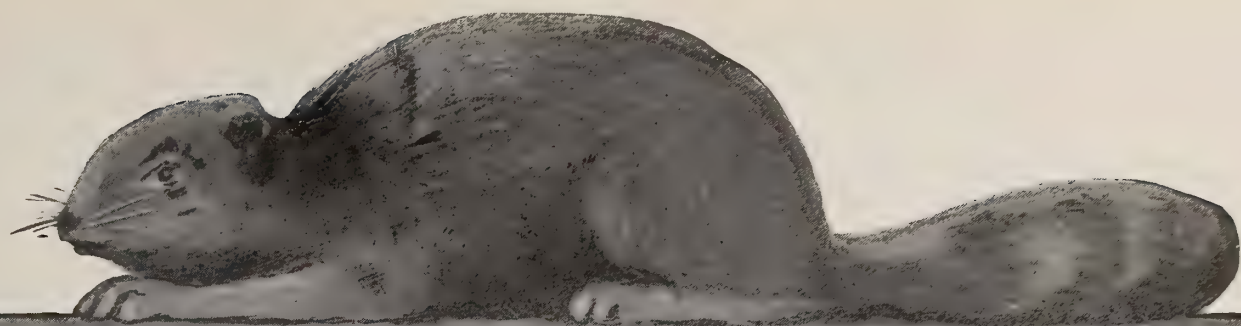
1/8 to 5/8" thick up to 48" wide, weighing up to 1,200 lbs. each

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We manufacture Merchant Bars, Rounds, Flats, Squares, Ovals, Half Ovals, Tires, Sleigh Shoes, Plain or Twisted Concrete Bars, Agricultural Sections, Cold Drawn Shafting, Machinery Steel, Angle Bar Fish Plates, Track Spikes and Bolts.

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Seamless Brass and Copper Tubes.
Guaranteed Ingot Metals—Yellow, Red and Composition Ingots.
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Brown's Copper & Brass Rolling Mills, Limited

New Toronto, Ont., Can.



"Help yourselves." One week later those plier manufacturers met again and brought with them five American-made single-handed pliers that cut the Germans' new wire with ease. The answers are beginning to come in, and those far-flung entanglements are going to be cut just as surely as the ever-increasing forces of Americans are going to be in on the killing. The armies of the Central Powers have passed their meridian. From now on they are going to taste some of the defeats they have inflicted.

But we were speaking of pliers. Before the war they were selling about two hundred thousand dollars' worth of pliers in the United States each year. Good-bye, business. Those American plier manufacturers who produced the tools to cut Germany's high-carbon wire are going to get what they are entitled to.

And the wire those pliers cut. How about German wire goods? In wire and wire articles they enjoyed about two and three-quarter million dollars' worth of business every year over here. There are wire mills and wire goods factories here at home who are a year or two behind with domestic orders merely because the needs of the Government come first, and Uncle Sam is getting their output.

What About Wire Goods?

When our boys break through and sweep over the town of Sommeilles and give its inhabitants the first just government they have had since shortly after the war began, what are they going to find? Why they will again hear verified the story of the two women and four children who took refuge in Mr. Adnot's cellar from which they were dragged. German soldiers raped both these women, assaulted them under the most atrocious circumstances. The children shrieked, one had his head cut off and two of the other little chaps had their right hands cut off.

Are we going to cut off the import of German and Austrian wire goods? Are we going to cut off shipments of German-made pliers into this country? Possibly we won't. It may be that we don't quite understand ourselves, and some perverted power unknown to us will keep up that old business relation, but my candid belief is that a great nation of men and women who won't forget are going to stand right squarely back of the fellow who is too busy to even see a German or Austrian business representative selling these lines. Yes, there's little doubt about it, Mr. Buyer. It's up to you.

Articles of Rubber

A Bavarian soldier writing home from Belgium, said: "I have bayonnetted seven women and four young girls in five minutes." Great, brave, heroic representative of his country, wasn't he?

A woman over ninety years of age bayonnetted in bed.

At Senlis, France, a civilian tied to a post and bayonnetted. His stomach torn open.

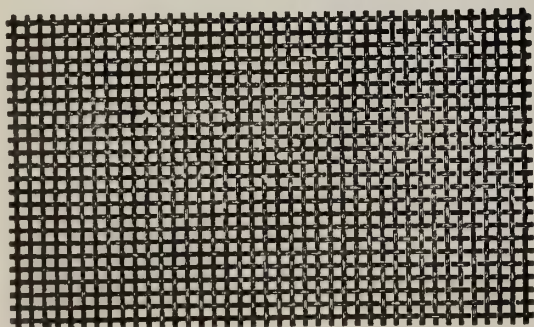
At Morelle, a civilian shot for helping a wounded French soldier. Across the street a little lame boy wantonly murdered. It seems endless. There are so many scores of these outrages on record that the overwhelming evidence first sickens and then shocks us to the stern necessity of cleaning this mess up for all time.

Many Americans have motored over quaint, beautiful, picturesque old France, and through the busy, thrifty, interesting little Kingdom of Belgium. Many are motoring there now, driving or riding in conveyances branded with the Red Cross, which is respected by all Allied armies and disrespected by those hell-hounds of the Central Powers. These motors roll on rubber-tired wheels.

Gives us another thing to think of—rubber—made into hot-water bottles, hose, gloves, tires and a hundred common items

GREENING'S

Wire Cloth



Wire Screening

All grades of Wire Cloth, Double Crimped.

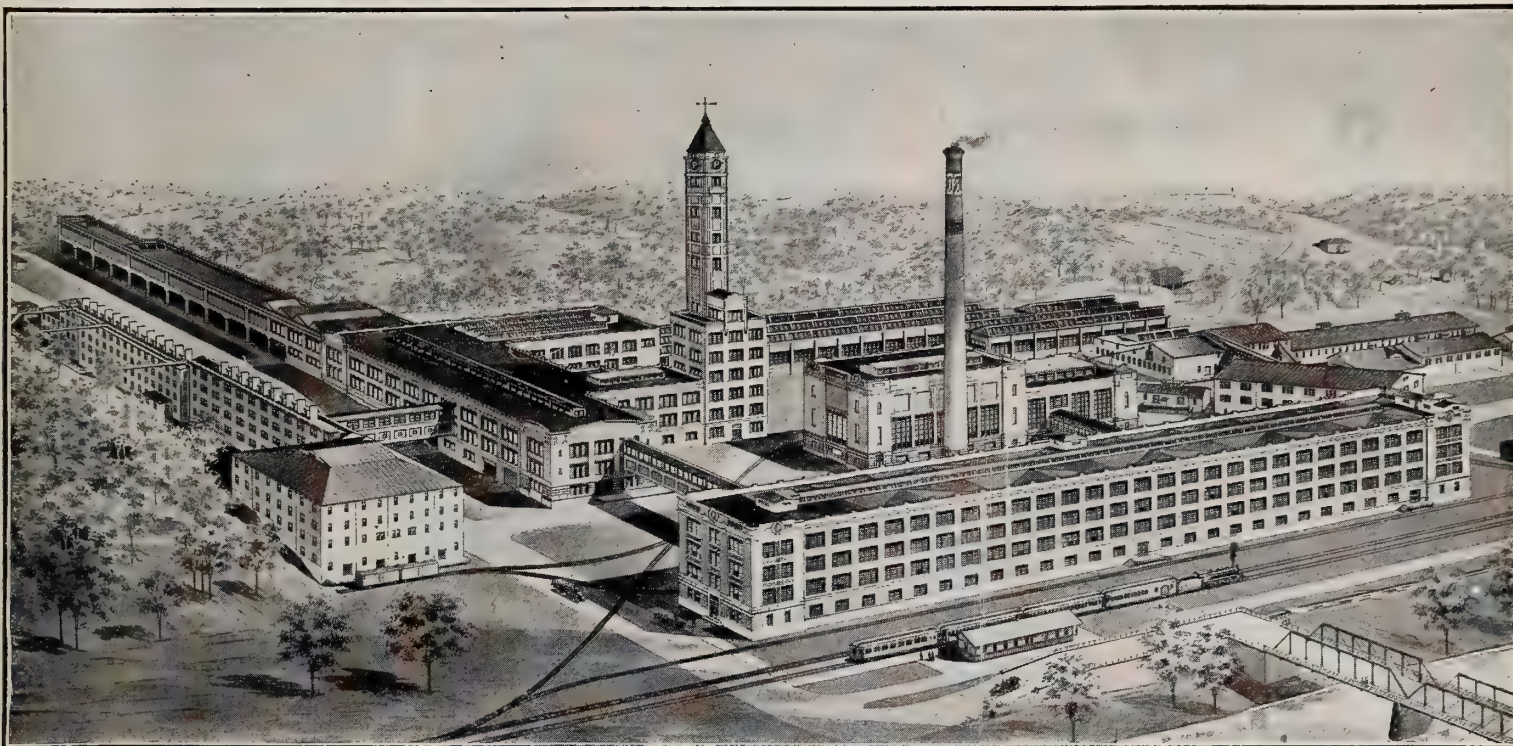
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Galvanized and Tinned Cloth.

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THE B. GREENING WIRE CO., Limited
HAMILTON, ONT. : : MONTREAL, QUE.



General Contractors:
Wells & Gray, Limited
Toronto

Plant of Peters Cartridge Co., Kings Mills, Ohio.

Architects:
Van Leyen & Schilling
Detroit, Mich.

Work on this plant was commenced in October, 1915, and has been carried on without interruption since that time.

We are now working on further additions to this plant. All buildings are permanent, fireproof, reinforced concrete buildings.

WELLS AND GRAY, LIMITED

ENGINEERS AND CONTRACTORS

Branch Office :

Bank of Commerce Bldg.

WINDSOR, ONT.

TORONTO, ONT.

701 Confederation Life Bldg.

of commerce. Before the war three-and-a-half million dollars of our money found its way to Germany each year to purchase rubber goods. After the war—well, we will ride over those battlefields on our rubber tires to pay our tribute to those brave men who fought and died there. We will visit those towns where Germany and Austria mocked God and shook their mailed fist in the face of civilization. But we won't ride on German-made tires, and here at home, "Made in Germany" on a thing of rubber will rob it absolutely of any commercial value. Keep it out. We don't want it now, and we won't want it then. Mr. Buyer, it's up to you.

Where Aluminum Comes In

In a recent speech, John Kendrick Bangs, said: "I want to tell you what the Hun is doing—tell you what kind of an enemy we are up against at the end of four years. Six weeks ago I held on my knee a little boy who, only seven years old, was playing in a little village that had not been bombarded. Then the Huns dropped bombs from their airplanes and killed some of the old men and women in this town. After they had passed the child was allowed to run out and play. On the road he found a toy—one of those toys we used to get at our children's parties with fancy caps and verses in them. He picked it up—as he was intended to do. He thought it was a toy—as it was intended that he should. Then he tried to break it apart—as it was also intended that he should do. Five hours later when that little fellow regained consciousness, there was only one finger left on his left hand. All the rest had been blown to pieces."

Is there a man with good red blood in his veins who would not go over to help put such beasts out of existence as could do such a thing as this?

The airplane that carried that vicious toy could hardly be made without the use of aluminum. Other Hun machines built of more aluminum have bombed defenceless cities in England. Still more of them have successfully attacked hospitals and dressing stations. They have been at it for three years, and their air raids have been carefully planned vicious murders. Their victims have been civilians, women, little children, wounded soldiers, doctors and nurses.

Before the war they sold us nearly four million dollars' worth of aluminium and aluminum wares every year.

There's no excuse for that when peace comes to cast a gentle mantle over a world so horribly treated. No, not a bit of it. America has uncovered too much aluminum. American manufacturers have come into their own, and we are going to keep them there.

Must Never Forget

Some distant day, when the German Crown Prince has taken a German-made aluminum saucepan and baled the Atlantic Ocean down to where the victims of German submarine warfare lie on dry land, we may forget, but until that time, no more German or Austrian-made aluminum in any form. And still, Mr. Buyer, it's up to you.

We could go on endlessly matching each hideous inhuman atrocity with an article on which Germany and Austria enjoyed American business, but it is useless to continue to convince when we are already over-sold on the subject. We could measure miles of dead French, English, Italian, Belgian, Roumanian, Russian, Creek and American soldiers with a German-made tape, and then forever blacklist German-made measuring instruments. The sights seen through periscopes, and field glasses have killed their optical glass business. The pictures taken with German-made cameras

Quality



Service

FOR COOL BEARINGS

We Manufacture:

**Phosphor Bronze Tail Shaft Liners, Pump Liners,
Stuffing Boxes, Stern Tube Bushings, and
Brass Castings of every description.**

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HAMILTON, ONT.

THE FOUNDATION COMPANY LIMITED

ENGINEERS CONTRACTORS
MONTREAL WINNIPEG



In these times when the conditions of the labor and material markets make building construction so difficult, it is more than ever necessary to put your work into the hands of an organization that will carry it through to satisfactory completion in spite of the difficulties.

This shows a foundry building of reinforced concrete and brick which we have just completed for Darling Bros., Montreal. T. Pringle & Son, Ltd., Engineers and Architects.

John Morrow Screw & Nut Company, Limited

INGERSOLL, CANADA

SET SCREWS CAP SCREWS

Nuts of Every Variety of Finish

TWIST DRILLS

ALSO SPECIAL SCREW MACHINE WORK

Where Highest Quality Desired Use "Morrow" Products

have killed their lens business. Oh, it's endless. The Germans and Austrians have repeatedly said that business is our God. Let's allow them to continue the slander. Yes, the Central Powers may have their own way on that little subject. Our business is just sacred enough so that it will not go to Germany and Austria in the days to come. Price may control some things, but the purchase of goods by Americans from the Central Powers involves a certain thing as well known and as highly regarded in America as it is little known and regarded in Germany and Austria. That thing is personal honor.

No true American would in any way knowingly impair that sacred thing, nor would he allow his fellow American to be deceived or imposed upon. Guarding this country against the trade impositions and deceptions that are sure to be attempted are keen, intelligent, resourceful competent men in whom we have implicit trust. Mr. Buyer, we are glad to put it up to you.

Providing Pensions for Old Employees

The System Adopted by the Montreal Light, Heat and Power Company—No Contribution Required from the Employees—Company Aims to Build Up a Feeling of Permanency Among Its Employees

By C. S. BAGG

Secretary-Treasurer, Montreal L. H. & P. Co.

Numerous plans embracing various features of welfare work for employees have received constantly increasing consideration in recent years and are now well established with different firms and corporations.

In the early part of 1910 our company felt that a time had arrived when some provision should be made for officers and

permanent employees who, after long years of faithful service, had reached an age when they were unequal to the further performance of their duties. With this object in view the directors, with the approval of the shareholders, determined upon a plan of superannuation.

The system adopted calls for no contribution from the employees themselves, the fund being contributed entirely by the company. By thus voluntarily establishing a system under which a continued income is assured to those who, after years of service, are on account of age or infirmity no longer fitted to perform their duties and without which they might be left entirely without means of support, the company aims to build up amongst the employees a feeling of permanency in their employment and a desire to remain in and devote their best efforts to the company's service.

Pension Fund Rules

The rules and regulations under which the pension fund is operated are as follows:—

1. The pension fund shall, subject as hereinafter mentioned, be administered by a pension committee whose members shall from time to time be nominated by, and hold office during, the pleasure of the board.

2. The pension committee will be constituted by the executive of the company, to wit: President, Vice-President, Secretary-Treasurer. *Ex-Officio* the President shall be chairman and the Secretary-Treasurer, secretary of the committee.

3. All actions and decisions of the pension committee shall from time to time be reported to the board for confirmation, and when confirmed shall (subject to such modifications, if any, as may be made by the board) take effect as from the date of the decision of the pension committee.

4. Subject as aforesaid and as hereinafter expressed, the pension committee shall have power:

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ARE made in over two hundred styles and combinations to meet every known requirement. We will assume entire responsibility in selecting the proper styles and combinations of our packings to work successfully and economically under any stated condition; and if goods are not wholly satisfactory to purchaser, we will refund promptly the cost of them. A card will bring our catalog, which fully describes our various styles of packings.



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Kraft Pulp, 65 tons per day

Unbleached Sulphite Pulp, 50 tons per day

Spruce Lumber, Band Sawn

White Pine Lumber, Band Sawn

Complete Planing and Resaw Mill

Timber Limits, 1,500 Square Miles



BATHURST, N.B.

CANADA

To make and enforce rules and regulations for the efficient operation of the pension department;

To determine the eligibility of employees to receive pension allowances;

To fix amount of such allowances; and

To prescribe the conditions under which such allowances may be granted;

And they may, for the government of their own proceedings, make rules not inconsistent with these regulations.

5. The benefits of the pension system will apply to those persons only who are now or hereafter may be in the service of the company and who have been required to give their entire time and attention to the business of the company or of the company and some controlled company jointly. In cases of such joint employment the pension committee shall decide the amount of the employee's pay to be taken into account in determining the pension allowance.

6. It is intended that in future all officers and employees shall be retired on reaching the age of 65 years. The pension committee may, however, retain any officer or employee in the service of the company for any further period. Provided, however, that no employee who has reached the age of 65 years without having served 15 years continuously in the company's service shall be eligible for pension allowance.

The Age of Retirement

7. The pension committee shall have power under special circumstances to retire an employee prior to his reaching the age limited by Article 6. Any employee after the age of 60 years, with not less than 20 years' continuous service, claiming to be unfitted by reason of permanent physical or mental disability from following his usual or any other suitable employment in the company's service, shall be retired if the

company's chief medical officer shall certify to such disability as aforesaid.

8. Any employee after 10 years' continuous service, who shall become incapable of continuing his service by reason of injuries accidentally received whilst actually at work in the employment of the company, shall, so long as his incapacity continue, in the opinion of the company's chief medical officer, be eligible for pensions or allowances as hereinafter expressed.

9. Retirement shall be made effective from the first days of January or July in each year.

Continuous Service

10. The term "in the service" shall refer to employment upon or in connection with any other "subsidiary company" operated by the company, and the service of any employee shall be considered as continuous from the date since which he has been continuously employed in such subsidiary company, whether prior or subsequent to their control or acquisition by the Montreal Light, Heat and Power Company.

11. An employee retiring under rule 6, provided he shall have been not less than 15 years in the company's service, and an employee retiring under rule 7 or entitled under rule 8, may be granted an annual pension or allowance calculated at the rate of 1 per cent. for each year of service on average annual wages or remuneration during ten years immediately preceding retirement.

(Example)—An employee has been in the service for 40 years and received on an average for the last 10 years \$600 per annum, the pension allowance would be 40 per cent. of \$600, or \$240.00 per annum.

12. No employee who sues the company for damages on account of personal injuries sustained by him in the course of his service will have any claim for pension or allowance under these rules.

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HAMILTON, - ONTARIO

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Bridges**

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**Capacity
36,000 tons**

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Shapes of Structural
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for immediate ship-
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from $\frac{1}{4}$ of a pound to 30,000 pounds

Steel and Semi-Steel Machine Moulded Gears
any size up to 18 feet in diameter without
the use of patterns

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THE CANADIAN BRIDGE CO., Limited

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Montreal Office: New Birks Building

MANUFACTURERS

RAILWAY AND HIGHWAY BRIDGES

Locomotive Turn Tables. Roofs, Steel Buildings and
Structural Iron Work of all Descriptions

13. When pension allowances are authorized, they shall be paid monthly during the life of the beneficiary, provided, however, that the company may cancel any pension in case of gross misconduct on the part of the pensioner, or of any action on his part inimical to the interests of the company.

14. Pensions will be payable monthly in arrear at the company's office.

15. Absence on leave, suspension or discharge, followed by reinstatement within three months, or temporary lay-off on account of reduction of force when unattended by other employment, will not be considered as a break of continuity of service.

15a. Employees going on strike or ceasing from work when their services are required, thereby become ineligible for pension allowance.

16. No pension or allowance shall be assignable, and in the event and during the continuance of any seizure, attachment or garnishment, will cease to be paid.

17. The secretary of the pension committee shall keep himself informed of the whereabouts of all employees who have been retired from service, and shall require satisfactory evidence from each of such employees at least once a year that he still comes within the rules and regulations. The proportion of unpaid pensions of deceased employees shall be paid up to and including date of death as the pension committee shall decide.

18. The acceptance of a pension allowance does not debar a retired employee from engaging in other business, but such retiring employee cannot so engage in other business nor re-enter the service of the company, except with the consent of the pension committee, without forfeiting his pension allowance.

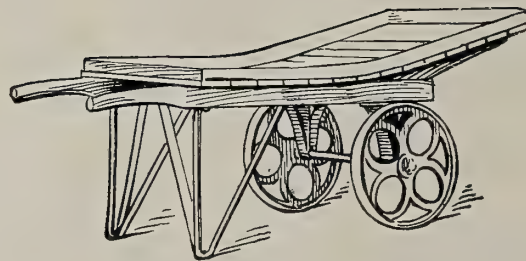
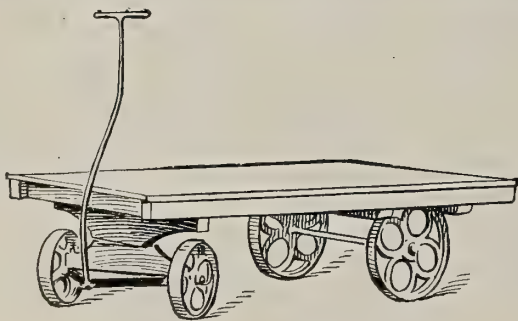
19. It is not intended in future to appoint to the permanent staff of the company any person above the age of 45 years.

20. It is expressly provided that neither by establishing out of its revenues a system of pensions by the company, nor by any other action now or hereafter taken by them or by the pension committee, shall it be construed as giving to any official, agent or employee of the company a right to be retained in the service or any legal right or claim to have any pension whatsoever, and the company expressly reserves its right and privilege to discharge at any time such official, agent or employee when the interests of the company in its judgment may so require, without liability for any claim for pension or other allowance than salary or wages due or unpaid.

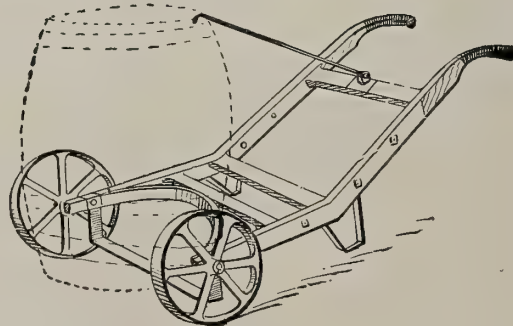
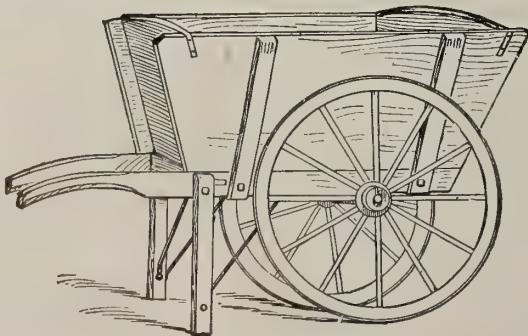
21. These rules and regulations shall take effect July 1st, 1910, and may be altered or repealed from time to time as the committee, subject to the approval of the board, may hereafter determine.

For the establishment of this pension fund the sum of \$10,000.00 has been appropriated annually; last year, however, it was found advisable to increase the amount and accordingly authorization was obtained and the annual appropriation brought up to \$20,000.00. It is the object to continue these annual appropriations until the fund has reached \$225,000.00, when it is estimated the income from the fund will then suffice to provide for any call that may be made upon it. In the meantime the pay of our pensioners is charged against operating expenses.

In closing I wish to say that several of our pensioners have accepted positions with other employers and we have also re-engaged a few at their special request; in such cases they receive the scale of pay in keeping with their new work in addition to the pension allowance.



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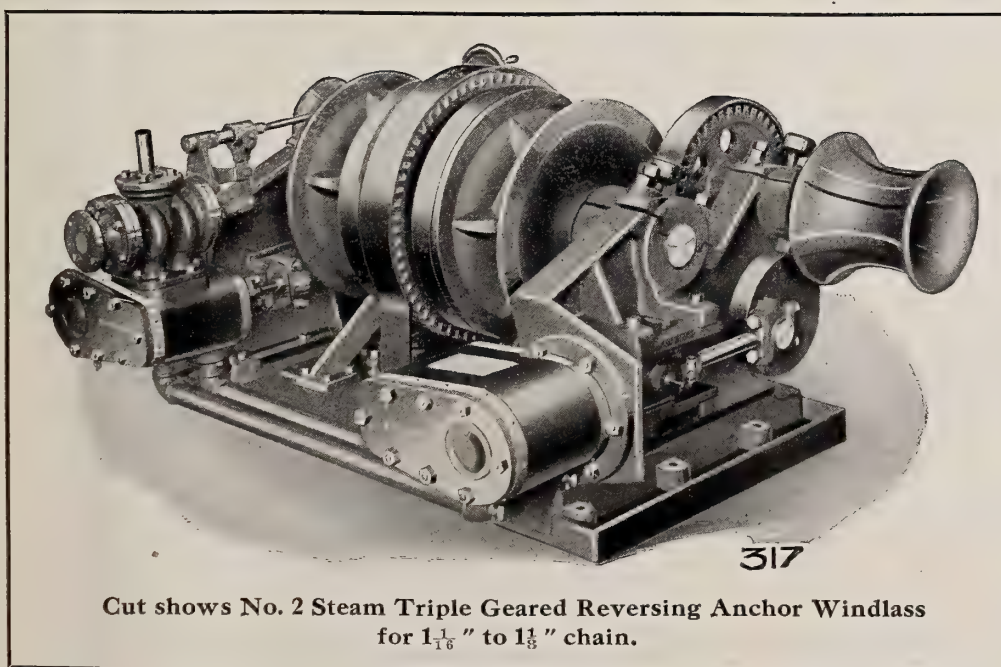
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Cut shows No. 2 Steam Triple Geared Reversing Anchor Windlass
for 1 $\frac{1}{16}$ " to 1 $\frac{1}{8}$ " chain.

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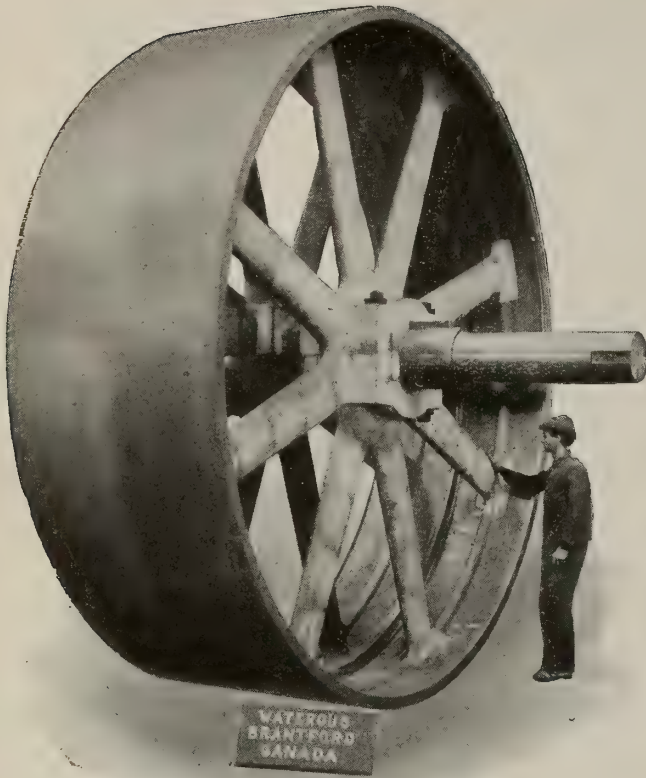
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1139 SHAW ST. TORONTO, CAN.

Capital Investments After the War

Only Solution is to Make the Industry and Commerce and the Exploitation of the Undeveloped Countries of the World, Free to Enterprise and Capitalistic Ventures, Irrespective of Political Power or Prestige

By W. W. SWANSON

(Reprinted from "The Journal of Commerce")

It is a matter of supreme importance to Canada that the flow of capital after the close of hostilities shall once more be directed to productive enterprise in this country. Wonderful as the achievements of the Dominion have been since the outbreak of war, in financing its own requirements, we shall require, with increased population and renewed industrial activities, large sums of capital from abroad. Up to August, 1914, the Dominion had received from abroad not less than \$3,000,000,000, by far the greater part of which had come from the United Kingdom. Although there has been much talk in the financial press of the country relying upon its own financial resources to a much greater extent than in the past, it is clear that we must be a borrowing nation for many years to come.

Since the outbreak of hostilities the so-called unfavorable balance of trade has been completely reversed, exports exceeding imports for the last fiscal year by about \$500,000,000. This is a matter of congratulation, to be sure, since the country has been compelled to find its own funds to finance the war, and has relied upon productive effort to meet interest due in the United Kingdom. Contrary to generally accepted opinion, however, the mere fact that imports exceeded exports before the war brought no disadvantage to this country. Canada, Australia and the Argentine will be, for a generation to come, still in the pioneer stage of economic development, and during that period will imperatively require heavy supplies of outside capital. In that event the balance of trade is likely in a few years to swing once more against the Dominion. But that should give no cause for concern, being a quite natural result of the stage of economic development that the country has attained. Let it be kept in mind, in this connection, that even the United Kingdom—the richest nation in the world before the war as far as fluid capital was concerned—had a heavy balance of trade against it. To the uninitiated it was a constant enigma that Great Britain, year by year, imported hundreds of millions of dollars worth of goods more than it exported, and yet the exchanges were usually in its favor. This simply meant that the United Kingdom had laid the world, through capital investments abroad, under tribute.

Two Types of Investments

Intelligent publicists must perforce pay far more attention than they ever gave before the war to this fundamental problem of the effect on political relations and economic world progress, of capital investments abroad. Broadly speaking, there have been two types of such investments—the kind that has contributed so much to the industrial progress of Canada, and the type that has kept the Balkan States and Turkey-in-Asia in turmoil. It is the latter form of international investments, so largely tinged by political color, that has been a continual menace to the peace of the world. In this connection it may be well to point out that the United Kingdom, during the course of the struggle, in addition to financing its own requirements, has come to the aid of its Allies to the extent of \$8,000,000,000; while the United States has advanced to the Entente, Belgium and Italy an approximately equal sum. This means that the two greatest democratic powers in the world, whether under formal agreement or not, must

ALCOHOL



BIRD'S-EYE VIEW OF CORBY DISTILLERY, THE LARGEST IN CANADA

With a capacity of 400,000 (proof) gallons per month we are the largest producers of Alcohol in Canada.

Manufacturers of vinegar, perfumes, essences, pharmaceutical preparations, etc., are invited to write us for prices of Alcohol suitable for their particular line of business.

We make a special feature of contracting for the requirements of manufacturers for the year or season, thus providing not only a uniform cost but also a steady supply as needed.

Those who are using Duty Paid Alcohol in their manufacturing processes would do well to consult us with a view to using it "In Bond," thus avoiding the use of two-year-old Alcohol. Under the rules and regulations of the Department of Inland Revenue, newly made Alcohol may be used "In Bond." This Alcohol is much cheaper than two-year-old.

METHYLATED SPIRITS or Denatured Alcohol is sold only by the Department of Inland Revenue, Ottawa, Ont., but any other kind of Alcohol may be secured from us.

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Steel Shipbuilders Engineers and Boilermakers

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Tugs, Scows and Dredges, Marine Engines and Boilers.

STATIONARY BOILERS

Horizontal and Water Tube Type Stacks, Tanks, Water Flumes.

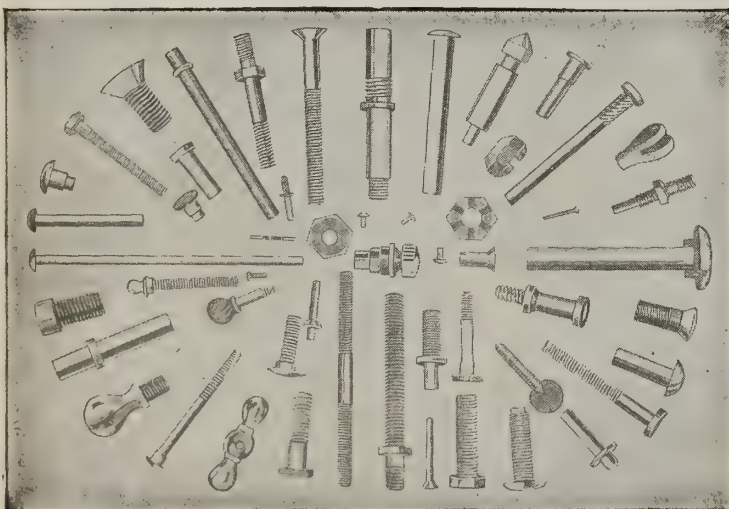
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Estimates given on all kinds of special Machinery.

REPAIR WORK

Given prompt attention.

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284 ST. HELENS AVE. - - TORONTO

W. L. TOBIAS, Superintendent
(Formerly Superintendent National Cash Register Co.)

work together for the preservation of peace in Europe, where they have so much at stake.

A concrete study of modern history, stripped of its glamor and romance, demonstrates that the root causes of the present struggle were largely economic in nature. Germany arrived late on the international stage, and determined to seize by force what she had lost by internecine quarrels during the last three hundred years. Again, contrary to generally accepted opinions, Germany had made really astonishing progress in colonial expansion up to the outbreak of war. In Asia Minor, in South-west and South-east Africa, in the Pacific and in China the Fatherland had not only extended its trade, but planted its flag. Not content with the fruits won by economic progress and diplomatic activity, Germany—as the London lectures of Prof. Hans Delbrueck, among other things, show—had determined to employ military might to achieve that place in the sun which its historical blunders had precluded. Imperialism, colonial ambitions and trade jealousies largely account for the German policy with respect to commercial concessions in Morocco, the construction of the Berlin-to-Bagdad railway, and the seizure of Kiao Chou. “Realpolitik” was the stern principle which Germany applied to the exploitation of her military power throughout Africa and in the Near and Far East.

Responsible for the War

It is strange that capitalistic enterprise, which has done so much for the progress of humanity, should have been largely responsible for the outbreak of war. At the beginning of hostilities the United Kingdom had invested in all parts of the world somewhat more than \$26,000,000,000, and was enlarging those investments at the rate of about \$1,000,000,000 per annum. These investments, both from the political and the economic point of view, made for substantial progress. The railroads of America, both of the United States and Canada and the Argentine, were largely built with British capital, as were those of Australasia and India. Immense engineering enterprises were undertaken and made possible by England's wealth everywhere throughout the world. As is well known, English capital was invested abroad, either in the form of bankable funds, including gold, or material goods. Canadians are well aware that through the use of English money enormous supplies of construction materials were imported from the United States. However roundabout the process might have been in the last analysis, it consisted merely in an exchange of goods for goods—British products being exported everywhere and paid for with the fruits of the labor and enterprise of those nations that secured them. In no way could English investors be said to have done anything other than stimulate the economic life of the countries that secured British capital, as well as helping to maintain stable government.

Social and Material Gains

The United Kingdom, Holland and France were the great lending powers that furthered the progress of the poorer nations in this manner—capitalistic enterprise that brought social and material gains to both creditors and borrowers among the nations. On the other hand, Germany, also a wealthy nation—the second in point of wealth in Europe before the outbreak of war—lent itself, in addition to the type of enterprise described, to investment ventures of a quite different nature. Russia, Japan and Italy, debtor nations themselves, curiously enough took part in capitalistic ventures abroad. We do not by any means intimate that the United Kingdom and France, as far as foreign investments were concerned, were given over wholly to altruism; but nevertheless, in the main, English, French and Dutch capital



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was placed abroad for essentially productive ends. It was quite different, however, with the type of investment that concerned itself almost entirely with securing concessions and commercial privileges from corrupt or unstable political powers.

After Special Privileges

Reduced to its simplest terms, much of this co-called investment process degenerated into a scramble to secure special privileges and a favorable trading position in the countries to be exploited. In Turkey, in Morocco, in Asia Minor, in China and elsewhere—notably in Mexico—capitalistic enterprise took the shape of securing franchises and monopolies. Necessarily this involved an immense amount of intriguing, in which corrupt Governments were bribed to sell to concessionaires valuable privileges away below their actual market value. Central American Republics, Mexico and South America on this side of the water, proved fertile fields for European financial enterprise of this nature. This involved a continual menace to the free political development of the Americas. Everyone will recall how Germany attempted to secure a foothold in Venezuela on the pretext of collecting claims for bankers and industrial interests of the Fatherland. At that time the Monroe Doctrine was put to a supreme test. President Roosevelt cut the Gordian knot by ordering the Kaiser to withdraw his fleet at short notice from Venezuelan waters, the United States guaranteeing to make the South American Republic fulfil its just obligations. Mr. Roosevelt had no intention of permitting German kultur to secure a stranglehold on Venezuela under the guise of a debt-collecting expedition. Nevertheless, this incident threw into sharp relief the menace to the political life of this continent through permitting predatory and unscrupulous European capitalists

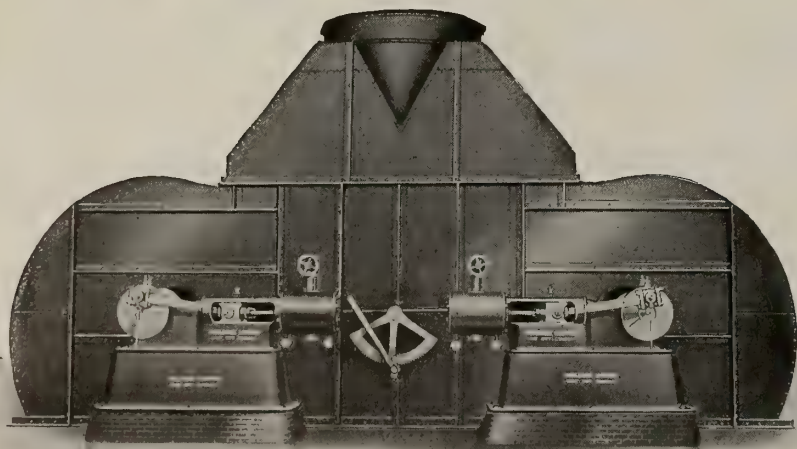
furthering, under the guise of concessions, the political interests of the States behind them.

It was a common enough ruse of the European Powers, as well as of Japan, to carry forward political aspirations under the guise of securing mining, railroad, oil and other concessions. The controversy over the control of the North China Railroad and the Manchurian Railroad, between Russia and Japan, centred not so much around the economic exploitation of that vast and fertile territory, but around ultimate political control. The same is true of the intrigues carried on in the Turkish Empire, especially in the building of the Bagdad Railway. Capital investments which depend for profit upon special privilege, monopolies and concessions always carried with them the threat, real or unintentional, of political control or influence in the countries concerned. This has been true of China, of the Balkans, of Morocco and the Near East. It is safe to say that the rivalries and jealousies based upon concessions of this nature were the real cause of the present war.

Powers Protect Subjects

Up to 1870 it was not the custom of the Great Powers to protect their subjects in capitalistic adventures abroad. It is well known that the English and French capital, for example, that was poured into Egypt in the decade 1870-1880 went unprotected by England and France until a new conception of the relation of private enterprise to political prestige and political penetration was developed. It was after 1870, also, that Germany appeared upon the scene in the guise of a colonial Power. Germany, more than any of the other nations, developed the doctrine that political protection and the flag must follow trade and commerce. This led to the placing of loans with tottering and corrupt Governments,

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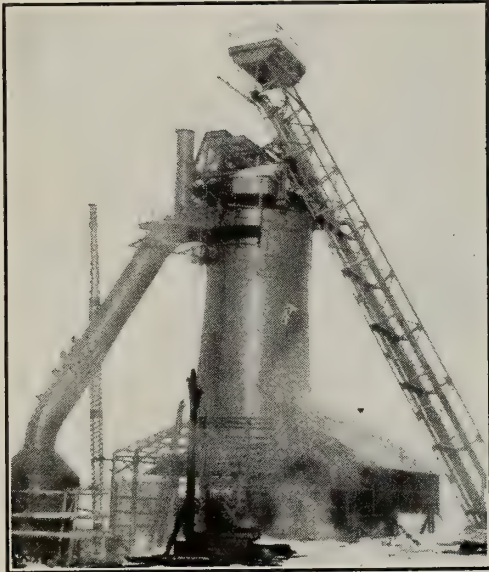
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because it was felt that interest and principal could be collected by the help of military power. Profit was the first object sought in capitalistic ventures of this nature; but ambitious Governments soon discovered that economic exploitation was the quickest and most direct road to political control. As long as the United States and the great European Powers lend their support to the collecting of claims carrying extortionate interest rates, or making concessions valid that have been secured for next to nothing, or with no relation to their market value, we may expect that capitalistic enterprise will remain an impelling motive for future wars.

The only solution is to make the industry and commerce, and the exploitation of the undeveloped countries of the world, free to enterprise and capitalistic ventures irrespective of political power or prestige. This does not mean that the United Kingdom, the United States, France and the other Powers shall not help their nationals to make good valid claims; it merely means that claims based upon extortion, intrigue and threat of military control shall be thrown upon the rust heap. Only that way lies sane political and economical progress in the field of international finance.

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Founded is that of the Value of the Human Being
—a Value above Property, above Institutions.
It Must Give Much that it May Receive Much**

By DR. C. G. FARNUM
Chief Surgeon, The Avery Co., Peoria, Ill.

(Reprinted from "Safety Engineering")

An ideal, we are told, is that which is conceived or taken as the highest type of excellence or ultimate object of attainment—an ideal is not merely a thing that has been attained, but the best conceivable thing that could, by any possibility, be attained.

In the work of modern industry the accomplishments in the lines of health and safety have been so great, the strides so rapid, that the ideals of yesterday are the working plans of to-day and the ideals of to-day, which seem far away and visionary, will be reached to-morrow. Ideals are ever changing things, and, if we possess vision and imagination, no matter what our labors are or have been, no matter what our strivings or accomplishments, we never reach them. As we progress we find that our ideals are constantly changing, are ever advancing, are unceasingly beckoning us onward.

In days not very far removed, the matter of a man's health and safety, of his education, his recreation, his personal habits and how and where he lived were considered his own particular business, and any interference with these was looked upon as interference with personal liberty and the rights of the individual. These ideas are based on such false and unfounded premises that they have no standing in the business or sanitary codes of to-day.

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In order to produce a good article it is essential that one have good material—competition is keen, criticism is sharp, and the most must be made of the resources at hand. Our laboratories have reached a state of perfection where the ordinary materials used in production can be and have been standardized. The big problem now is not with inanimate material, but with human material.

An ideal must be based upon some sound fundamental principle and the principle upon which our ideal is founded is that of the value of the human being—a value above pro-

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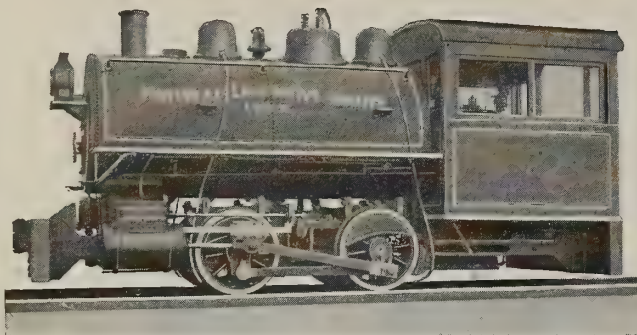
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party, above institutions. The ideal industry must be one which gives much that it may receive much. Any industry may attain the degree of health and safety that it desires to have, or with which it is satisfied.

The activities that are to work toward ideal conditions as to health and safety shall radiate from and centre about a chief executive, who should be an officer and director in the company, and the success of the movement will depend on his broadness of vision, his courage and his honesty of purpose. What the department is called and how the field is divided is immaterial. What it shall include in its activities is highly essential.

Activities Closely Interwoven

There must be the department of labor, which deals first with the human material; the department of medical supervision, which examines, classifies and assists in placing this material where it will be most useful and productive and looks after its repair when necessary; the safety department, which protects it from injury or destruction; and the welfare department, which looks after the general wellbeing of the human material while it is in the employ of the company.

The first branch of the department of labor is the one of employment. The applicants are interviewed personally and intimately as to the work they have done, what they wish or hope to do, and why. Their recommendations are examined and checked up, and they are sent to the foreman, who has with the employment manager a requisition for such a workman as this man gives promise of becoming. Accurate records are kept so that, as vacancies occur, promotions may be justly made. The superintendent of employment must know men; he must be able to quickly and with true accuracy make fine distinction between plodders and drones and between enthusiasts and mere babblers; between steady men and floaters. His technique is immaterial, but he must get results.

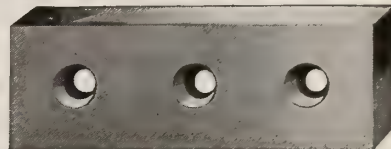
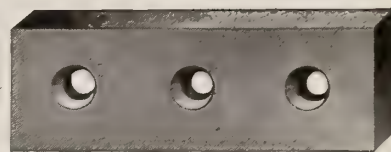
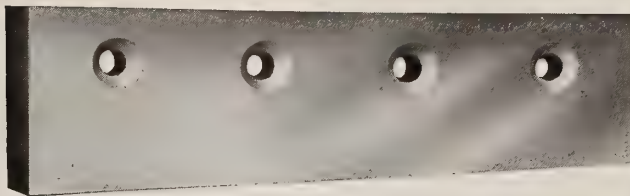
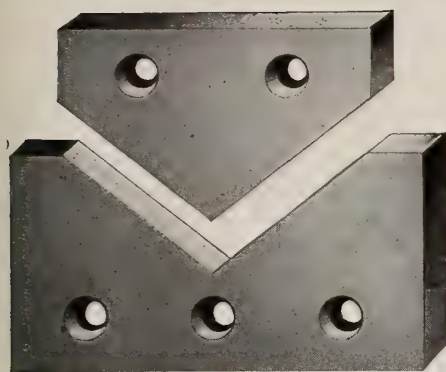
The head of the department of labor must be thoroughly familiar with the matter of hours and wage, of overtime and bonuses, of working conditions and standards, and he must be keenly alive to the last word on scientific management. Here his work brings him into consultation with the plant superintendent, and their combined ideas must determine the general labor policy of the plant.

Another phase of the work of this department is the provision of work instructors, whose business shall be to teach the new employee how to do his work efficiently and safely. We hear much and have data on what it costs to "hire and fire"—of the appalling cost of labor turnover. Efficient instruction in the work to be done will promptly reduce this enormous waste by reducing the amount of spoiled material damaged machines, accidents, and time lost in gaining efficiency.

The department of labor sees to it that new employees become familiar with the plant as a whole, with the finished product. A man may be able to develop very little enthusiasm in the job of grinding castings or of packing boxes, but let him see the part this plays in the ultimate result; make him familiar with the part he takes in production, and it dignifies his job and thereby steadies labor.

Medical Supervision Endless in Scope

The department of medical supervision in the ideal industry is one of endless scope. It begins with the applicant for work who is given a complete physical examination by the chief surgeon and his assistants—not a mere inspection, but a thorough and painstaking examination, such as would be made by a careful diagnostician in his offices or in a hospital. This examination often brings out most unsuspected things, and it is upon these physical findings that



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the final decision is made as to the work that the man is to do, for the proper mating of the man and the job is one of our biggest tasks.

The result of the examination is then communicated to workmen verbally or by letter, or both, for improvement can only come through the co-operative efforts of the doctor and the man. Re-examinations are made periodically of all the men in the plant and very frequently in the case of the defectives. It is positively exhilarating to see the enthusiasm and conscientiousness with which men follow up the suggestions given them on the basis of these examinations. It means much to them to know that some one is watching out for them and caring for their physical interests. They appreciate and co-operate.

The Question of Rejections

Formerly much was said on the subject of rejections, and from certain quarters opposition to this work rose on that ground. That is a thing of the past. The question of rejections does not exist in the minds of those who think, for the industrial physician and his associates do not start out with the idea of whether or not the applicant shall be given work, but his dominating idea is: What job in this plant is best suited to this man's condition from a standpoint of health, safety and efficiency?

It is true that men with active tuberculosis, malignant syphilis, scarlet fever or smallpox cannot be put to work, but they are not material on the labor market. They are public menaces. They do not belong in industry. Their place is in an isolation hospital. We believe that practically every man is capable of doing some work and of doing that work safely and well, and the task we face is to get that man and that job together.

We are continually asked what we do about men with one arm or one leg, with bad vision or defective hearing, with those who have hernia or Bright's disease, or high blood pressure or heart disease, or any other of the thousand and one defects that American workmen possess. What *do* we do? Why, we put them to work, *but* we put them at work compatible with their condition and get busy on the improvement of that condition. Jobs in a plant should be classified and analyzed from this point of view and then if a man happens to possess but one leg put him on a one-legged job. To reiterate: Get the man and the job together. Some of us have statistics covering several years showing that under this system the worse the physical defect, the less the accident incidence. Is that paradoxical? It is not. It is the proof of our contention. Moreover, these same statistics show that labor turnover is inversely to the physical defects of the laborer. The reason and the remedy are apparent.

Influence on the Habits of Men

By no means the least of the values attached to this work is the influence it has on the habits of the men. If the matter of clean teeth is followed up it brings general cleanliness. The questions of food or of exercise lead to better health; of sleep or exposure lead to better habits until, gaining power with their one momentum, these habits of betterment make for a clean shop and healthier and safer men. Even the question of booze—the biggest habit problem in industry—is rapidly disappearing, and, regardless of legislation, will soon cease to be an economic problem.

In the ideal industry the department of medical supervision not only cares for the injured promptly and efficiently in a properly equipped dispensary or hospital, but assumes the complete medical, surgical and dental care and treatment of all sick employees. The physicians of the department visit them in their homes or in the hospitals. The nurses of the department contribute their share to the medical, surgical,

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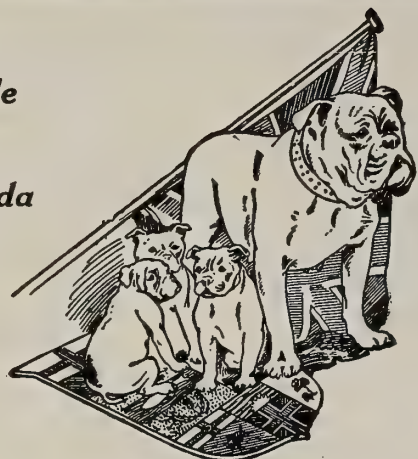
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dental and educational work in the plant and in the homes, and less lost time and healthier and more efficient employees are the result.

Occupational diseases are combated constantly, whether they are the glaring and easily recognized ones or the more insidious that creep upon a man slowly and gradually. The re-examination will ferret these out, and if preventive measures fail, the man is given different work. General plant sanitation in all its phases comes also under the department of medical supervision, and light, ventilation, water supply washrooms, toilets, etc., must all have their proper attention.

A very prominent factor in the education of men and the enlistment of their co-operation along these lines is the health bulletins, which are issued regularly, written in the language of the layman, upon various topics of health, sanitation and right living. These have a wide range of value, and are found to be carefully studied and greatly appreciated, not only by the workmen themselves, but in their homes among their wives and children.

Verily, the work of the company doctor in these times is a man's job, and no physician's training and no physician's skill is too good for this work. He must not only know medicine and surgery, prophylaxis and sanitation, but he must know men and recognize their worth, and, above all, he must recognize the delicate and intricate manner in which his work is interwoven with that of labor, safety and welfare, and how much will be destroyed if any attempt is made to separate any one of them.

Business and Humanity Work Together

Industrial medicine must be preventive for the masses, not merely curative for the individual.

When one thinks of the astonishing rapidity with which the safety movement has grown from a few isolated individual efforts to its present international size and importance, he is impressed with the fact that here at least we have the unusual sight of business and humanity working hand in hand for the common good of labor and capital on common ground, with aims and ideals the same. Is it any wonder that it has grown? Is it strange that the ideals of yesterday are obsolete to-morrow and that our dreams of to-night will be realized when we waken? As one of the old safety inspectors puts it: "You go to bed to-night with a lot of fine ideas of what you are going to do next week and wake up to-morrow to find that some gink did it yesterday."

The ideal plant has a very definite accident and fire prevention organization. This consists of a safety engineer, his varied grades of inspectors, designers and workmen; general and department committees, and fire, police and watchman departments. Under the direction of these safeguards are made and installed; inspections of machines, apparatus, buildings and conditions are made; safety meetings are held; accidents and near accidents are analyzed; and preventive measures considered and installed, and general police and watchman duties performed.

Safety is not merely mechanical or legislative. Both may contribute their part but there are other vital essentials. It is variously estimated that mechanical safeguards are responsible for from 25 per cent. to 30 per cent. of accident reductions. The other elements that make up the remaining large percentage are: First, safe men, properly inspected and properly fitted to their work; and, second, the education and co-operation of these men. This, then, is the big job of the safety department.

Education takes time, and co-operation comes after education. There is tradition to be gotten rid of, suspicion to be dispelled, interest to be awakened and enthusiasm to be developed. It is a task that calls for all a man has of tact and skill, of patience and fortitude. It calls for brains; it



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calls for courage; but most of all, it calls for heart. This is the essence of humanitarianism and is worthy of any effort necessary for its highest attainment. No safety department is or can be self-sufficient. Here, of all places, must combined resources be brought into play. The ideas of no one man or of one plant are enough. The combined experience of the 3,334 members of the National Safety Council must be utilized, and in his own plant the policy of the labor department must be for it; the employment man must talk it; the medical department teach it; the welfare department preach it; and the safety department itself must live it constantly.

Bacillus Humanitaricus

First, the men higher up—the officers, the directors, the superintendent, the foreman and the sub-foreman—must be inoculated with this germ of safety, which we might call the *bacillus humanitaricus*. Then, and only then, may we expect it to become epidemic among the workmen throughout the plant.

When accidents are analyzed and workmen consulted before remedies are offered the workman's suggestions are secured, and when his interest in this is awakened you have not only made a convert, you have also made a teacher. Department committees should be made up largely of such men as these and they should be changed frequently.

A suggestion department supplies a constant stream of useful ideas, the values of which no man can estimate. Some of the finest things in safety have come from workmen, and until their earnest and whole-hearted co-operation is established no industry can be said to have really more than a start toward ideal safety. Safety bulletins are utilized, both those of the National Safety Council and bulletins based on local safety conditions and accidents, and when accidents do occur they must be analyzed and none of their teaching value lost.

Of late, in the industrial world, the centre of gravity has shifted. The dividend is still a weighty matter, but more and more attention is being paid to those things formerly considered not to be distinctly profit-producing. The lesson of human life is being considered above the lesson of human purse. Welfare work is not new. In isolated places it has been developed, and to a very high degree, for a number of years, but as a movement that possessed any breadth of scope it is a modern idea. It has now become such a fundamental part of all business that it is not a question of whether we have it but of how much we can get and how quickly. Its growth has been phenomenal and its value inestimable, but in order that it shall obtain the highest degree of perfection its channels of growth must always be kept idealistic rather than materialistic.

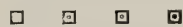
Honesty and Justice

Just how work shall be divided to produce the ideal conditions, is not essential; whether lighting, ventilation, lockers, washrooms, etc., shall be under the subhead of medical supervision, of safety, or welfare, does not matter. In fact, as I have said before, these works so overlap and are so interwoven that only by going hand in hand can they produce the greatest good. The fundamental principle here at its best must be honesty and justice, and any system based on any other foundation will surely fail. One of the broadest and most fertile fields is that of education. The range of this field is without boundaries.

It may be the simple matter of the education of the foreigner, or it may be the technical education of the young man in the industries. It may be the continuation of the common school work with the boys and girls who, by circumstances, have been lifted out of school and thrown on the labor market. Or it may be the domestic education of girls

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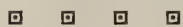


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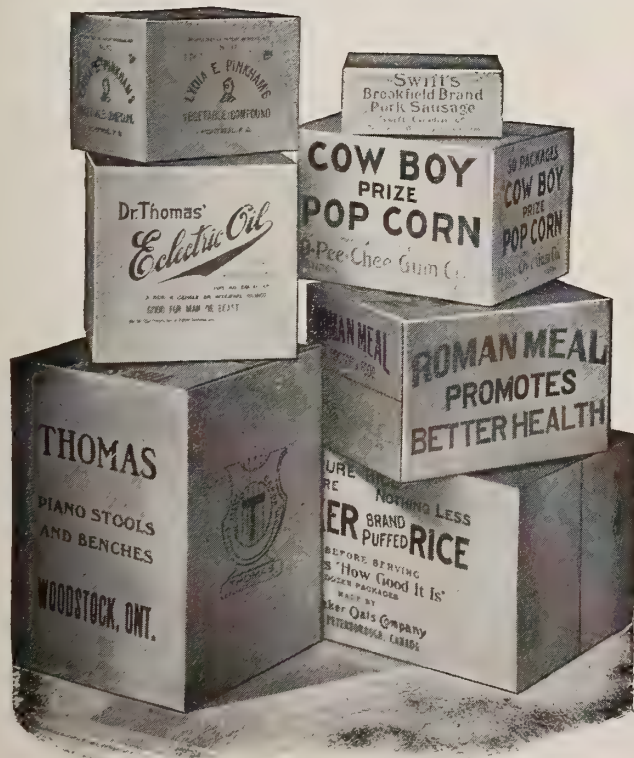
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and women, or it may mean the direct training of men for given work. Whatever the character of the educational work may be, the value is so great and its possibilities for good so limitless, that if our welfare departments did nothing else, they would here find ample justification for their existence.

Another of the important activities of the welfare department in the ideal industry is the employees' benefit association. The scheme of organization, the breadth of scope and the plan of conditions, etc., are still an open question, but they are actual necessities. They must exist, and the welfare department is the proper place for their inception, and later for their encouragement and actual supervision and maintenance. The welfare department supervises lunch-rooms, and rest-rooms, social activities and recreation and the esthetic side of industrial life with all its multitudinous activities.

One of the big problems of the welfare department is that of homes and housing—a problem that offers a field, the surface of which as yet has been barely scratched, yet one which, under proper cultivation, will bear abundant fruit. We are keenly cognizant of what developments here will do toward the solution of many of our hardest problems.

Men Behind the Work

Do not imagine that the installation and development of such work as I have here briefly outlined will give you an ideal plant. It alone will not. The really colossal thing in all this work is the men behind the work. The chief executive, the labor head, the chief surgeon, the safety engineer and the welfare superintendent must be of the highest type and of the finest training. The spirit of humanity must possess their souls, and the love of humanity must be their religion. They must be idealists, men of vision, if we are to raise life out of the commonplace and make to-morrow better than to-day.

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Safeguarding the Health of Employees

Not Three Men Out of a Hundred are in Normal Health—The Other Ninety-seven Have More or Less Serious Ailments, and in Hardly One Case Out of Ninety-seven is the Victim Aware of His Malady

By E. W. SWAFFORD
(Reprinted from "Safety Engineering")

It is amazing how few organizations there are which pay any definite, serious attention to the question of keeping their men at the top notch of physical condition.

This is rather remarkable in view of the amount of energy which is devoted to "Safety First" and other welfare work in a large number of industrial concerns. A good deal of thought has been given to maintaining a standard mentality, in preaching loyalty, co-operation, etc., without any attention apparently to the importance of physical development. And yet we know, they know, that unless the man is in A No. 1 physical trim he cannot put that sunshiny sparkle and vim and vigor into his personality which the manufacturer appears so anxious about.

No one can estimate the amount of money which is lost in this country because men are working at only 60 per cent. efficiency, or 70 or 80 per cent. The Government investigated the cases recently of 1,000,000 laborers and found that, taking them as an average, in the whole nation 270,000,000 working days are lost every year. Even more important, however, from the business man's point of view, is the waste of those who, though they may never really lose a single day from their duties, are working at a subnormal standard.

Through ignorance of the laws of physical health there are hundreds, yes thousands, who are only nine-tenths as pro-

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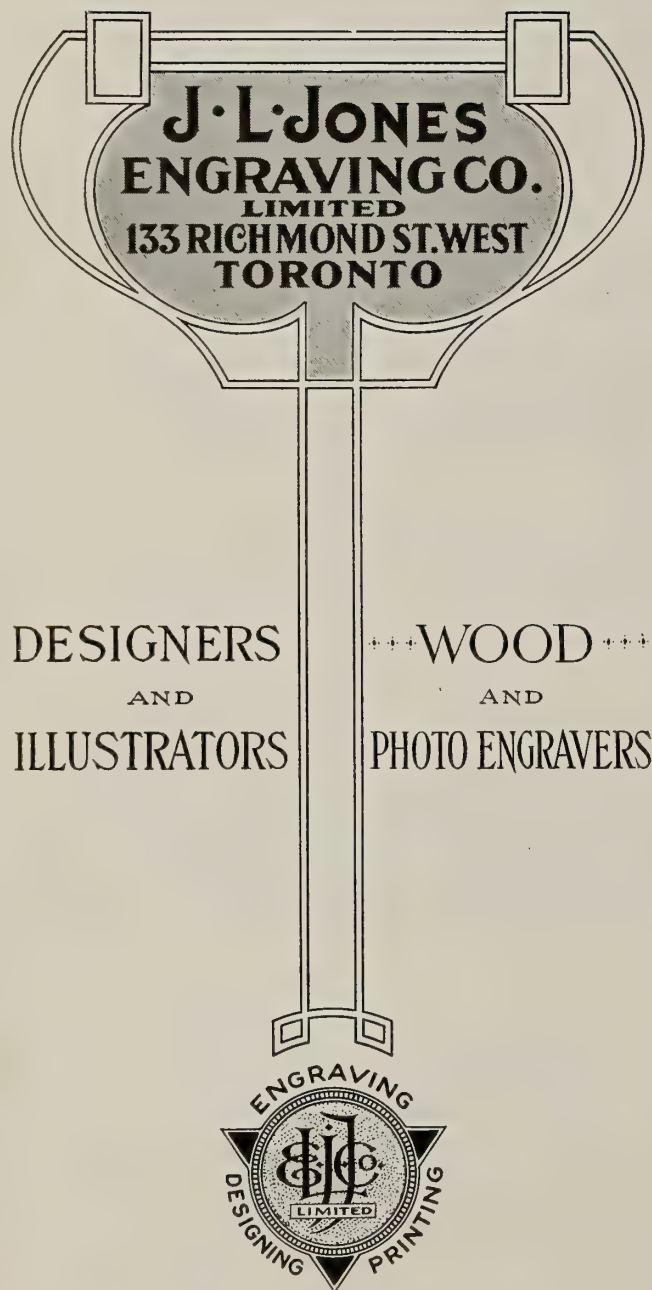
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ductive as they might be, and their employers are losing many good dollars by reason of this condition.

Literally, not 3 men out of 100 are in normal—that is, practically perfect—health. The other 97 have more or less serious ailments, and in hardly one case out of 97 is the victim aware of his malady.

Lengthening Men's Lives

These figures are not the result of haphazard conjecture. Several years ago an organization was established for the purpose of lengthening the lives of men and women, by warning them of an approaching disease before it had gone so far as to be very serious. One of the functions of the organization referred to is taking charge of the health of all employees of a factory or business house for a lump sum paid by the organization and not by the employees. Several thousand young men who are employed by a number of the biggest banks, trust companies and other commercial enterprises in New York were examined some time ago at the inauguration of the service, and here are the returns:

	Per Cent.
Practically normal	3.14
Imperfect—advice needed regarding physical condition or living habits	96.86
Not aware of impairment	96.69
Referred to physicians for treatment	59.00
Organic heart disease	15.05
Arteriosclerosis—thickened arteries	23.13
High or low blood-pressure	25.81
Urinary—alubumin, sugar, casts	35.63
Individuals showing combined disturbances of circulation and kidneys	12.77
Faulty vision, uncorrected	16.03
Flat foot	3.19
Faulty posture	7.38
Overweight—important	5.45
Underweight—important	19.16
Unclassified	7.38

This statement shows the percentages that the various impairments are of the whole number of employees examined. Many employees, of course, show several combined impairments. Average age, 30.

I believe that every organization should take stock of the physical resources of its men and women. A physician could be employed with great profit, likewise a physical director. A gymnasium is the best investment any employer could make in building up and maintaining the health of employees.

Wearing Out Diseases

Doctors are greatly concerned these strenuous days in what they call "wearing out" diseases, the three points of attack on the human system being the heart, the arteries and the kidneys. In most cases arterial, heart or kidney troubles give no sensation of physical discomfort until quite advanced, so that the victim, who has always "felt fine," is shocked and much aggrieved to find out that he is below par.

There were thousands of such cases among applicants for the Reserve Officers' Training Camps, and undoubtedly the knowledge imparted by the army surgeons and examining physicians will give a great stimulus for better health.

Health is the best thing in the world. It is a vital part of the efficiency of both employer and employee, of the business itself. Without health there can be no progress, no success. The laws of right living should be followed. All the necessary aids to the conservation of health should be used. It is the job of factory or railroad manager, superintendent or foreman to live right and keep the men right.



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Among the Industries

Under this heading are published items of news of current interest concerning the activities of Canadian manufactures. Information about changes of interest, enlargement of plants, and plans for future developments are always welcome, and are published free of charge, provided they should not be properly classified as advertisements

*Items prefixed with an asterisk are based on official information received in each case from the companies mentioned. Other items, while secured usually from reliable sources, have not the same authoritative origin.

ALBERTA

Lethbridge.—Work on a \$65,000 extension to the Imperial Oil Company's distributing plant here has been commenced.

Redcliff.—Arrangements are being completed for the installation of an open hearth furnace in the rolling mills here. A deal has been made with a United States company, which makes a specialty of contracting for that class of work. It is expected that work will commence on this new addition about the beginning of October, and will be ready for operation within 60 days.

BRITISH COLUMBIA

Esquimaux.—Plans are being made for a shipyard for the Esquimaux Ship Co., which contemplates the construction of four auxiliary schooners, two of 2,800 tons and two of 3,500 tons.

Kelowna.—Tenders have been called for the erection of a two-storey packing house for Singer Brokerage Co., Edmonton.

New Westminster.—Alterations, etc., to lumber plant of Lumber Products, Limited, Brunette St., costing \$120,000 have been started.

North Vancouver.—To facilitate the work of equipping the boats that they build in their own yards with boilers, engines, etc., the Lyall Shipbuilding Company is making preparations to construct a long dock in front of the shipyards.

Port Coquitlam.—The Pacific Construction Co. are building two new "ways," and as soon as these are ready work on the 1,500-ton boats will commence.

Prince Rupert.—A. Ludgate has plans prepared for the erection of a sawmill with a capacity of 40,000 feet per day.

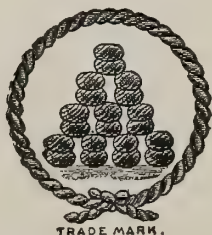
Vancouver.—The Peter Lyall Shipbuilding Co. is planning to make extensions to its large plant at the foot of Bewicke Ave., Vancouver, including the utilization of the street ends of Bewicke and Fell Avenues and the construction of a wharf out from the end of the fill at the foot of Bewicke.

Plans have been prepared for a workshop and machine shop for Harrison & Lamond, 744 Hastings St. W.

Hoffan Motor Boat Co., Georgia St., contemplate the erection of an aeroplane factory.

Excavation was started recently for a steel foundry for Columbia Block & Tool Co.

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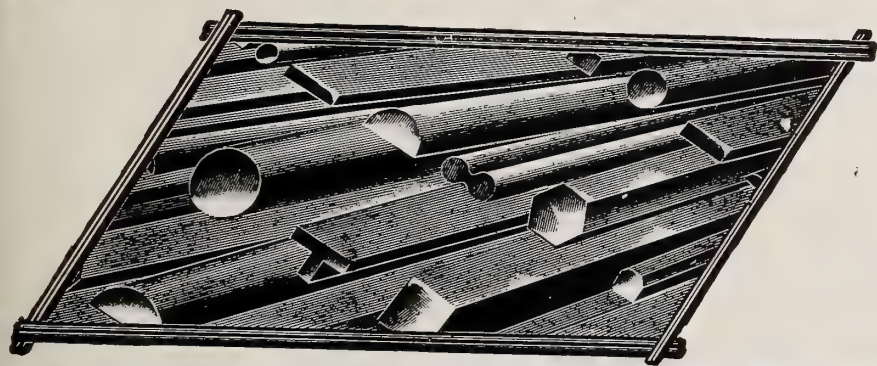
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Victoria.—Hon. John Hart, Minister of Finance for the Province of British Columbia, who has recently returned from New York, states that there will probably be an additional contract for the construction of twenty more wooden ships at Victoria by the Foundation Co.

MANITOBA

Winnipeg.—Work has commenced on alterations to flour mill of the Ogilvie Flour Mills Co., Higgins Ave.

NEW BRUNSWICK

Dalhousie.—Tenders are being received by Dalhousie Lumber Co., Limited, for masonry, steel, roofing, painting and electrical work for addition to lumber mill.

St. John.—Excavating was started recently for a one-storey foundry and pattern building for T. McAvity & Son, Limited.

NOVA SCOTIA

Halifax.—Four buildings of the Halifax Dry Dock and Shipyards have been destroyed by fire. They included the dock pump house, boiler house, old machine shop and air compressor building.

Whyecomagh.—Wells & Gray, Limited, Toronto, have the contract for a \$150,000 fire brick plant for an American syndicate. The company plans a model town to accommodate the staff.

ONTARIO

Acton.—A \$10,000 brick factory has been erected by the Reliance Shoe Co., Limited, Toronto.

Brantford.—Repairs costing \$4,000 have been made to the factory of the Waddell Preserving Co.

The Waterous Engine Works Co. are making an addition to their boiler house at an estimated cost of \$16,000.

Work is to start for a \$35,000 munition factory for Ker & Goodwin, 256 Colborne St.

Carleton Place.—Walls are up for a knitting mill costing \$25,000 for Hawthorn Mills Co., Limited.

Craigmont.—A plant for the treatment of feldspar tailings will be erected here by Coniagas Mines, Limited, of St. Catharines. Equipment will include crushing machinery, power machinery, transmission material, etc.

Elmira.—Contract has been let for \$30,000 addition to the factory of the Elmira Rubber Co.

Galt.—Sheldons Limited, Cedar St., will build an \$15,000 addition to their factory.

Hamilton.—J. R. Beckett, 35 Aikman Avenue, proposes to erect a two-storey brick addition to his bakery.

The Acme Stamp and Stencil Works, 34 Sydney St., will build an addition to plant at a cost of about \$20,000.

Contracts have been let for a \$40,000 one-storey frame addition to factory for Canadian Cartridge Co., Sherman Ave. North.

The Petrie Mfg. Co. Lottridge St., are making a small addition to their factory.

The Ford-Smith Machine Co., Earl St., are erecting a factory and office building costing \$30,000.

Ingersoll.—Contract has been let for alterations and addition to screw factory of John Morrow Screw Co.



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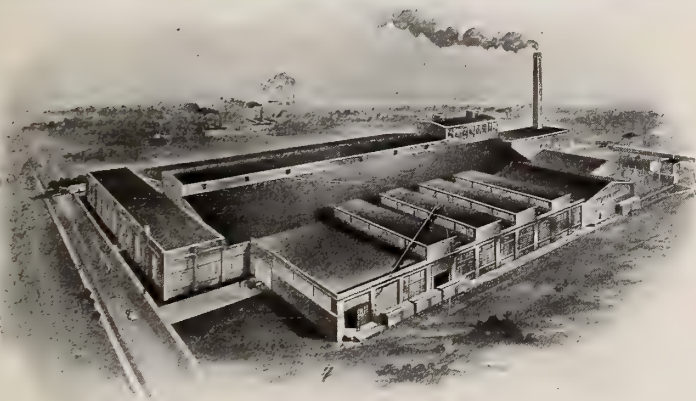
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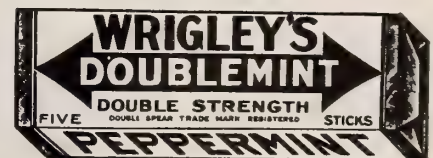
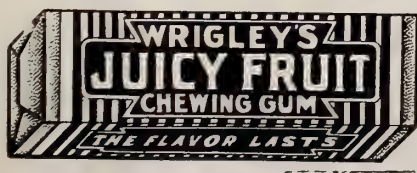
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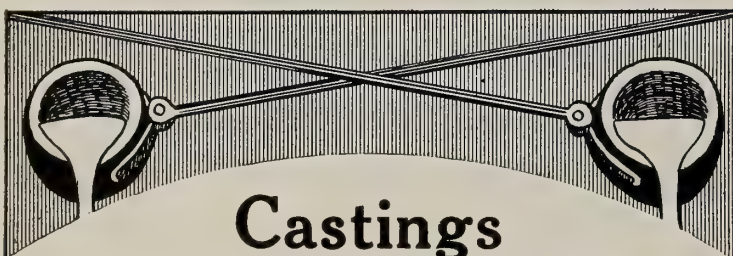
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TORONTO

Leaside.—The Leaside Munion Co. are erecting a one-storey brick storehouse at a cost of \$75,000.

A two-storey office building is being built at Leaside for the munitions works there. The building will be 60 ft. x 65 ft. in plan, and will cost about \$50,000. The material used will be pressed brick with Indiana limestone trim and oak finish inside.

London.—Beattie Bros., York St., are calling for tenders for a factory costing \$100,000.

The General Motor Co., Pittsburg, will build a \$50,000 two-storey brick motor truck factory.

Ottawa.—The Beach Foundry Co., Broad St., are erecting a foundry and addition to factory at a cost of \$75,000.

Pembroke.—Contracts have been let for \$25,000 machine shop and \$20,000 garage for Thos. Pink Co., Limited.

Port Hope.—The old St. Lawrence Hotel building on Walton St. is being remodelled into a factory for the Allied Drug Co., Limited.

Stratford.—The Avon Hosiery Co. are building a one-storey boiler house at a cost of \$4,000.

Toronto.—The new forging plant of the Leaside Munion Works is now roofed and the interior is being fitted up with the big presses and machinery. The new wing or "C" plant is being rapidly completed and will be in full working order in about six weeks.

The British-America Shipbuilding Co. have awarded contract for a 40-foot angle furnace, equipped with oil burners.

The head office of the International Nickel Co. of Canada, Limited, has been established in the Harbor Commission Building at the foot of Bay St., Toronto.

The Corrugated Paper Box Co., 187 Geary Ave., are making a \$10,000 two-storey addition to their plant.

A \$6,500 brick addition is being made to the plant of W. D. Beath & Son, Limited, 20 Cooper Ave.

The Toronto Shipbuilding Co., Limited, has a contract for ten 1,000-ton wooden vessels for French interests.

A \$15,000 one-storey addition is being made to the factory of Sanderson-Pearcy, Limited.

Maples, Limited are building a \$15,000 one-storey factory at 272 Van Horne St.

Contracts have been let for an \$8,000 two-storey office building for Toronto Iron Works, Limited, Cherry St.

Ontario Fertilizers, Limited, St. Clair Ave. W., are spending \$20,000 on office buildings and addition to factory.

A \$20,000 three-storey mill and brick addition to packing plant for Matthews-Blackwell, Limited.



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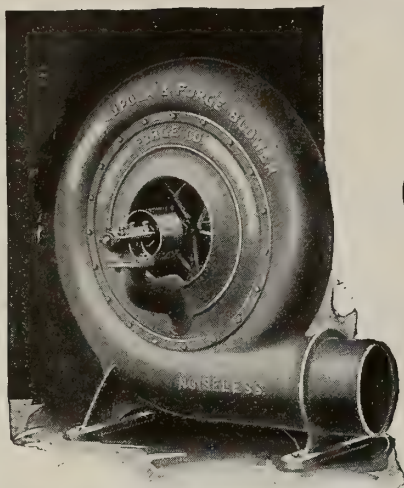
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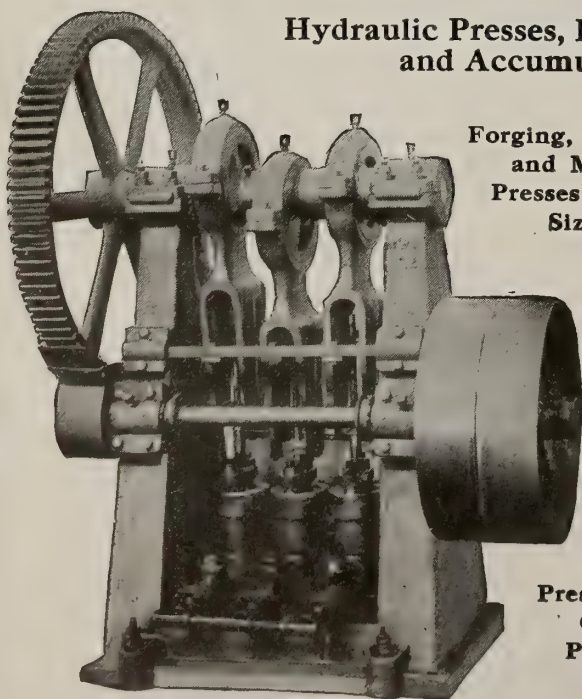
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Toronto, Canada

The Galena Signal Oil Co., 134 Royce Ave., are building a \$60,000 two-storey concrete oil plant.

Plans have been prepared for a \$25,000 two-storey frame and brick office building for Canadian Aeroplanes, Limited, Dufferin St.

Windsor.—The Canadian Salt Co. have had plans prepared for a \$5,000 one-storey boiler house.

QUEBEC

Cap de la Madeleine.—The contract has been let for a \$100,000 factory and machine shop for the Tidewater Shipbuilders, Limited.

Montreal.—The Flexner-Taylor Co. of Canada, Limited, has been incorporated with a capital of \$50,000, head office at Montreal. This firm is authorized to manufacture and deal in all kinds of asphalt and asphaltic preparations, asbestos, cement, and various other building, paving and roofing materials.

The Canada Cement Co. has just received a large shell order from the U.S., which will involve the erection of a new shop and other extensions to cost in the neighborhood of one million dollars.

The Dominion Oilcloth Co. are making repairs to their factory at 1192 St. Catherine St. East.

An addition, costing \$30,000, is being made to the factory of the Hampton Mfg. Co., Limited, Elmira Ave.

Contracts have been let for a \$35,000 addition to the plant of the Montreal Locomotive Works, Limited.

A \$45,000 factory building is under erection for Lamontagne Limited, 338 Notre Dame W.

Shawenegan Falls.—Brick office and stores buildings are being erected by the Canada Carbide Co.

Three Rivers.—Tenders are being received by Demerest Mapes, architect, care Canada Steamship Lines, Montreal, for a \$50,000 machine shop.

The Boston Shipping Co. is said to have a contract for the construction of eight new vessels. Four vessels are nearing completion at Three Rivers and will shortly be launched.

Plans are drawn for two-storey frame extension costing \$200,000 for Three Rivers Shipyards, Limited.

Business Opportunities in China

Since 1914 China's Purchases of Foreign Products have Increased by more than 1,000 per cent. and even at that the Per Capita Expenditure on Imports is only about 65 Cents

(From "New York Times")

With China rapidly becoming modernized and its inhabitants adopting western methods and western goods, the possibilities of trade development in that country loom up larger, it is said, than anything else on the industrial horizon. Exporters and manufacturers who are seeking a foreign outlet for their products after the war is ended realize more clearly than ever before the vast opportunity for business in this comparatively virgin field, and are establishing now the machinery for introducing their goods into China, and for working up that market.

"Statistics of Chinese imports show," says the head of a large New York export commission house, "that since 1914 China's purchases of foreign products have increased by more than 1,000 per cent. And, even at this great increase, the per

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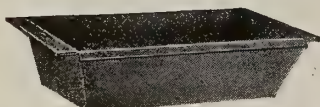
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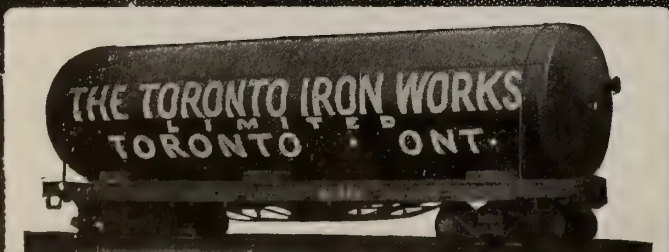
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capita expenditure on imports in China is now only about 65 cents, figured on a basis of 400,000,000 population, as compared with over \$8 per capita in South America. Thus it is seen that, though the Chinese Republic is already rapidly developing as a market for foreign goods, there is still bound to come an even greater increase in imports than has already taken place. There is every reason to believe that the \$2,000,000,000 mark will be passed in Chinese imports in the not very far distant future, and everything favors this country getting the great bulk of this business.

"Not only are Chinese generally better disposed toward the United States than to any other country, but no other nation will be in a position to make large investments such as are necessary to the development of new foreign markets. It is not unlikely also that this country will have after the war the largest merchant marine of any country in the world. And, more important than its aggregate total tonnage, it will be a completely rounded out merchant marine having all the various types of ships necessary for the different requirements of a great industrial nation.

"The enactment recently of the Webb law, permitting combination for the development of foreign trade, will be a great help and stimulus to the building up of a substantial business with China. Most of the export organizations now being formed have included in their plans steps for going after the Chinese markets. I personally know of at least two such organizations which intend shortly to establish branches in several of the larger commercial centres of China. Just as the Japanese are establishing commercial museums in China for the purpose of showing Japanese goods and gathering commercial data, so do these American organizations plan to get in touch with the local conditions and learn the requirements of the local merchants.

"In all foreign trade propaganda the possibilities of after-the-war trade with South America have been greatly overestimated. Instead of our exports to the continent south of us increasing, it is more than likely that they will decrease somewhat, and that on account of competition from European countries, they will not again, for a good many years, reach the rather staggering totals which they have attained during the period since the war started nearly four years ago. I do not mean that this country cannot meet European competition, and specifically German competition, when peace comes, but simply that a certain portion of the business which of necessity is now given to this country exclusively, is bound to drift elsewhere when there is once more somewhere else to drift.

"In China conditions are very different. Prior to the war the political situation in China was not such as to attract the commercial enterprises of foreign countries to any great extent. Investment, it is generally conceded, usually precedes extensive trade development in foreign markets, and neither European nor American capital was very largely invested in China. Europe will have need for practically all the capital it can lay its hands on for reconstruction after the war. Only this country will have a surplus available for foreign investments; and railroad construction and agricultural and mining developments in China offer a most lucrative field for the wise and careful investor.

"Thus this country is in the enviable position of having all the facilities for the development of one of the richest fields that have ever been opened to exporting nations, the money for investment, the manufactured products and raw materials wanted, the ships to take them to market, and, last but not least, the good-will of the people of China. This last should be guarded jealously by the merchants of this country, and above all other things, nothing should be done to endanger its existence or to stop its growth."

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Expansion of Pulp and Paper Industry

Canada Now Has a Total of About Ninety Mills and Production is Increasing Rapidly

By DR. J. S. BATES

The pulp and paper industry has expanded very rapidly in Canada during the past ten years, and it appears that Canada is destined to become perhaps the leading country in the world in the manufacture of pulp and paper products from wood. This is largely because of our extensive natural resources of water-powers and suitable tree species. It is important to point out the opportunities and responsibilities for Canadian engineers in this technical industry. The consumption of paper increases so rapidly from year to year in the more highly developed countries that there is no indication of slackening development, at least for some years to come. Canada now has a total of about 90 mills, many of which are large and of modern design. The export figures for the calendar year 1916 show that pulpwood, wood pulp and paper have increased to nearly half of the total export value (approximately \$100,000,000) of all forest products, with the exception of the small proportion of specially manufactured articles.

The softwoods are the most important species for paper-making, spruce and balsam fir accounting for the bulk of the woods used, with hemlock, jack pine, tamarack and other conifers coming into more extensive use. Poplar and basswood, representing "soft hardwoods," are valuable for making soda pulp and a variety of hardwoods, such as birch and maple, are used in smaller quantity. In 1915 the total reported pulpwood consumption amounted to 1,405,836 cords, with an average value of \$6.71 per cord. In addition, Canada exported 949,714 cords of pulpwood, which quantity has remained fairly constant for several years, while the consumption of pulpwood in Canada has rapidly increased.

Control of All Steel Production

War Board to be in Full Control of Co-ordination of Productive Power—Finance and Management Not Affected by Order-in-Council

The Government has taken over the control of steel production in Canada. The Board is vested with full authority to give directions to the different companies as to the extent and character of their product, taking into consideration the facilities of each concern.

By the Order-in-Council which has been passed, the Board's powers will be extensive in the supervision and direction of steel production and manufacture in Canada. It does not refer, however, to the financial or general management of the concerns. The object is to co-ordinate the producing power so as to ensure the greatest efficiency as well as the maximum of production.

The measure has become necessary owing to the shortage of steel in the United States, due to the great and constantly increasing demand for war purposes. This, it is explained, makes it imperative that the greatest possible economy in production be exercised along with co-operation by the different companies.

The War Trade Board will co-operate with producers to bring about the proper measures, and it has authority to enforce such orders as it may deem necessary. Each steel plant will be assigned a certain kind of work.

Basic as well as war industries in Canada have need of supplies, and they must, to the extent of our ability, be provided in Canada owing to the tremendous demands upon the American steel industry.

Mr. Manufacturer

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TRADES AND LABOUR BRANCH

NOTICE

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ROBT. HUNGERFORD, Toronto
FRED KELLOND, Hamilton
S. J. MALLION, Stratford
MRS. A. BROWN-REDDICK, Toronto
H. J. TUTT, Toronto

Persons having business with any of the Inspectors should communicate with them at the Parliament Bldgs., Toronto.

W. A. RIDDELL, M.A., Ph.D., HON. F. G. MACDIARMID,
Superintendent, Minister of Public Works
and Highways.
Phone Main 5800



Preventing Waste in Wood Industries

By DR. J. S. BATES

Sawmill waste amounts to about 40 per cent. of the original tree. The finished lumber, on the average, represents only from 30 to 35 per cent. of the tree. New developments in the utilization of wood waste are being made continually, but it is false economy to handle waste unless the by-product industries can be carried on at a profit. Effective utilization calls for a variety of chemical and mechanical processes which must be adapted to the form, species and quantity of wood waste available at any point. Slabs, edgings and trimmings represent 15 to 17 per cent. of the tree. Among the more common uses are fuel, laths, box shooks, small slack cooperage, small wooden articles, kraft and sulphite pulp, excelsior, wood flour, wood wool and producer gas. Sawdust accounts for another 11 per cent., and is used to some extent for fuel, producer gas, briquettes, polishing metals, insulating, packing, bedding in stables, floor sweeping compounds, composition flooring blocks, linoleum, improving clay soils, smoking meat and fish, blasting powders, wood flour, plastics, porous bricks, mixing with mortar and concrete, distillation, ethyl alcohol, oxalic acid and carborundum. Bark amounts to about 10 per cent. of the tree. It is usually used for fuel, although hemlock and oak barks are important in the tanning industry. A recent development is the use of spent hemlock bark for mixing to the extent of about 30 per cent. with rag stock in the manufacture of roofing felts. Experiments on its use in wall board, indurated pails, conduits and wallpaper give promise of success. In the manufacture of special wood products a good deal of wood is lost, during seasoning, by decay due to poor methods of storage, and also by warping and splitting. There is a large waste in converting wood into the desired shape for the finished article. Proper co-ordination with plants making small wooden articles brings about a great economy of material. Shavings find use as fuel and to some extent for packing, bedding, drying wet land and manufacturing fibre board. Beechwood shavings are required in large quantity by vinegar factories, but this is another case where specially cut wood is usually used instead of relying on by-product wood from various plants.

TRADES AND LABOUR BRANCH

NOTICE

To Manufacturers, Dealers, and Users of Steam Boilers

All steam boilers built in, or entering the Province of Ontario, and boilers exchanged or repaired, are subject to Government Inspection as prescribed in the Steam Boilers Act, 3 George V., C. 61.

Before any work of repair or alteration is commenced on any boiler, notice must be sent to the Department stating the nature and extent of the repairs or alterations proposed to be made. If the Chief Inspector should consider such repairs or alterations of an extensive character, the boiler must be inspected in accordance with the Regulations by an Inspector authorized under the Act.

All communications should be addressed to the Steam Boiler Branch, Department of Public Works, Parliament Bldgs., Toronto.

HON. F. G. MACDIARMID, D. M. MEDCALF,
Minister of Public Works, Chief Inspector of Steam Boilers.
W. A. RIDDELL, M.A., Ph.D., Superintendent.



TRADES AND LABOUR BRANCH

NOTICE

TO STATIONARY AND HOISTING ENGINEERS

Everyone operating a STATIONARY steam plant of 50 h.p. or over in the Province of Ontario must hold a Stationary Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Everyone operating a HOISTING steam plant working at a pressure of 20 pounds or over irrespective of horse power, and used for hoisting in structural operations or excavating purposes, in the Province of Ontario, must hold a Hoisting Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Application forms for obtaining STATIONARY or HOISTING Engineers' Certificates, may be had upon applying to the Chairman.

HON. F. G. MACDIARMID, W. C. MCGHIE,
Minister of Public Works and Highways, Chairman of Board.
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The scarcity of castor oil which, for a time, loomed large as an obstacle to the United States' ambitious airplane programme, and also seriously threatened the production of important leather substitutes, has been successfully overcome, according to recent government announcement.

When the insufficiency of the castor oil supply became apparent, 6,000 tons of castor beans were imported and planted last spring in sections of eight southern states—California, Cuba, Hayti, and San Domingo, on government contracts. The result has been exceedingly gratifying, as the crop to be harvested will net more than 2,000,000 gallons of first grade oil. This amount added to the supply on hand will fill all industrial and medicinal needs for a year.

Thousands of gallons of castor oil are used yearly in the making of leather substitutes of the pyroxylin coated type, which, since the outbreak of the war, have performed invaluable service in releasing leather for vital military requirements.

The success of the experiment of planting castor beans in the United States adds another paying crop to the list in the sections named, and, in all probability, in adjoining areas. It also relieves the United States of the necessity of depending on imports for its supply of castor oil.

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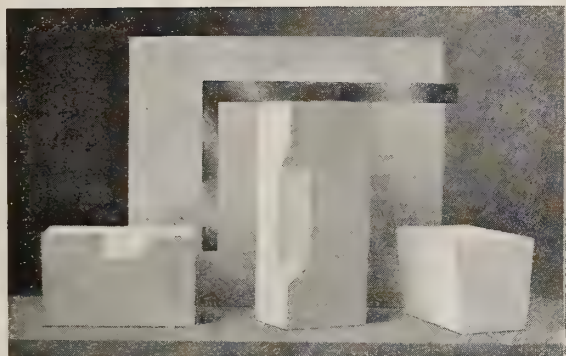
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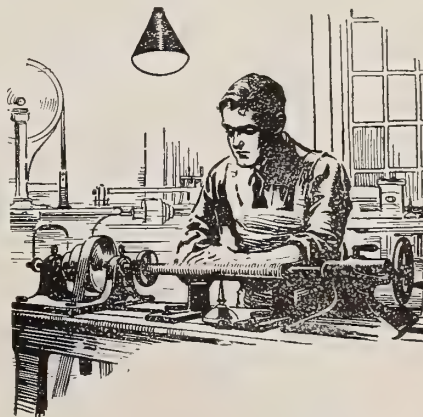


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- *Canadian Hart Wheels, Ltd., Hamilton, Ont.
- *Dominion Abrasive Wheel Co., New Toronto, Ont.

ACCOUNT BOOKS

- *The Brown Bros., Ltd., Toronto.

ACETYLENE GAS

- *The Prest-O-Lite Company.

ACETYLENE GAS BURNERS

- Economiq Acetylene Burner Co., Toronto.
- *The Prest-O-Lite Company.

ACIDS

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- *The Nichols Chemical Co., Ltd., Montreal.

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- J. J. McLaughlin, Ltd., Toronto.

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- *Smart-Turner Machine Co., Ltd., Hamilton, Ont.

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- *Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

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- *Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.
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- *The Canada Metal Co., Toronto.

- *Tallman Brass & Metal Co., Hamilton, Ont.

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- The Canadian Bag Co., Ltd., Montreal, Que.

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- *Smart-Turner Machine Co., Ltd., Hamilton, Ont.

BARS, iron

- London Rolling Mill Co., Limited, London, Ont.

- London Rolling Mill Co., Limited, London, Ont.

BASEBALL GOODS

- A. J. Reach Co., Brantford, Ont.

BATHS, enamelled

- Amherst Foundry Co., Ltd., Amherst, N.S.

BATTERIES, dry

- The Canadian National Carbon Co., Ltd., Toronto.

BATTERIES, Flashlight

- The Canadian National Carbon Co., Ltd., Toronto.

BATTERIES, Storage

- The Canadian National Carbon Co., Ltd., Toronto.

BEARINGS

- *The Chapman Double Ball Bearing Co., Ltd., Toronto.

- *The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEARINGS, bronze

- *Tallman Brass & Metal Co., Hamilton, Ont.

- *United Brass & Lead, Ltd., Toronto

- BEARINGS, pillow block and upright

- *Canadian Fairbanks-Morse Company, Ltd., Montreal, Que.

- *Dodge Mfg. Co., Ltd., Toronto.

- *The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEDS, camp folding

- *Otterville Mfg. Co., Ltd., Otterville, Ont.

BEEF

- E. W. Fearman Co., Ltd., Hamilton, Ont.

BELTING, chains

- *Canadian Link-Belt Co., Toronto.

- *Dodge Mfg. Co., Ltd., Toronto.

- *The Goldie & McCulloch Co., Ltd., Galt, Ont.

BELTING, elevator

- *Canadian Consolidated Rubber Co., Ltd., Montreal, Que.

- Dunlop Tire & Rubber Goods Co., Ltd., Toronto.

BELTING, leather

- The Beardsmore Belting Co., Ltd., Toronto.

- *J. L. Goodhue & Co., Danville, P.Q.

- *Sadler & Howarth, Montreal.

- *The D. K. McLaren Belting Co., Ltd., Montreal.

- *The J. C. McLaren Belting Co., Ltd., Montreal.

BELTING, rubber

- *Canadian Consolidated Rubber Co., Ltd., Montreal, Que.

- *Dunlop Tire & Rubber Goods Co., Ltd., Toronto.

- *Gutta Percha & Rubber, Limited, Toronto.

BELTING, stitched cotton duck

- *Dominion Belting Co., Ltd., Hamilton.

BENT GOODS

- The Crown Lumber Co., Woodstock, Ont.

BICYCLES AND ACCESSORIES

- *Canada Cycle and Motor Co., Ltd., Toronto.

BISCUITS

- The Montreal Biscuit Co., Montreal, Que.

BLACK SHEETS

- *A. C. Leslie & Co., Montreal.

BLANKETS

- Slingsby Mfg. Co., Ltd., Brantford, Ont.

- J. Walsham & Son, Ltd., Bolton, Ont.

BLANKETS, horse

- Slingsby Mfg. Co., Ltd., Brantford, Ont.

- J. Walsham & Son, Limited, Bolton, Ont.

BLASTING ACCESSORIES

- Canadian Explosives, Ltd., Montreal, Que.

BLEACHING POWDER

- Canadian Salt Co., Ltd., Windsor, Ont.

BLOWERS

- *Sheldons, Ltd., Galt, Ont.

- *The Canadian Blower & Forge Co., Limited, Kitchener, Ont.

- BOARDS, wood, binder, fibre specialties

- *Beveridge Paper Co., Limited, Montreal.

BOATS OF ALL KINDS

- Peterboro Canoe Co., Ltd., Peterboro, Ont.

BOILER COMPOUND and OILS

- Electric Boiler Compound Co., Ltd., Guelph, Ont.

BOILER PRESERVATIVES

- *Beveridge Paper Co., Limited, Montreal.

BOILERS

- *M. Beatty & Sons, Ltd., Welland, Ont.

- *Darling Bros., Montreal.

- *Goldie & McCulloch Co., Limited, Galt, Ont.

- John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

- *Polson Iron Works, Ltd., Toronto.

- J. & R. Weir, Montreal, Que.

- Taylor-Forbes Co., Ltd., Guelph, Ont.

- *The Watrous Engine Works Co., Ltd., Brantford.

- BOILERS, hot water or steam.

- Steel & Radiation, Ltd., Toronto.

- Warden King, Ltd., Montreal, Que.

BOILERS, steam.

- *Jenckes Machine Co., Sherbrooke, Que.

- *The Goldie & McCulloch Co., Ltd., Galt, Ont.

- *The Watrous Engine Works Co., Ltd., Brantford, Ont.

- BOILERS, steam and brass work

- *The Watrous Engine Works Co., Ltd., Brantford, Ont.

BOILER STANDS

- Anthes Foundry Ltd., Toronto.

BOLSTERS

- *Canadian Car & Foundry Co., Ltd., Montreal, Que.

BOLTS AND NUTS

- *The Canadian Tube & Iron Co., Ltd., Montreal, Que.

- *The National Acme Mfg Co., Montreal, Que.

- *The Steel Company of Canada, Limited, Hamilton, Ont.

- Starr Mfg. Co., Ltd., Dartmouth, N.S.

- *United Brass & Lead, Ltd., Toronto

BOOKBINDERS

- R. G. McLean, Toronto.

- *The Brown Bros., Ltd., Toronto.

BOOKCASES

- *Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

- BOOKCASES, sectional (Gunn)

- The George McLagan Furniture Co., Ltd., Stratford, Ont.

BOOKLETS

- R. G. McLean, Toronto.

BOOKS, blank

- *The Brown Bros., Ltd., Toronto.

BOOTS AND SHOES

- Ames-Holden-McCreedy, Ltd., Montreal, Que.

- J. Leckie Co., Ltd.

- The John Ritchie Co., Ltd., Quebec, Que.

BOXES

- *Crouse-Hinds Co., Ltd., Toronto.

BOXES, cellular board:

- *The Thompson & Norris Co. of Canada, Ltd., Niagara Falls.

BOXES, rattle and soap

- The Arlington Co. of Canada, Ltd., Toronto.

BOXES, steel shop

- *Steel Trough and Machine Co., Ltd., Tweed, Ont.

- BOXES AND SHOOKS, wooden

- The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

BOXES, wooden

- G. & J. Esplen, Montreal, Que.

- Barchard & Co., Ltd., Toronto.

- BRAIDS AND TRIMMINGS

- The Moulton Mfg. Co., Limited, Montreal.

BRAKE SHOES

- *Canadian Hart Wheels, Limited,

BRASS BOLTS AND NUTS

*Tallman Brass & Metal Co., Hamilton, Ont.
*United Brass & Lead, Ltd., Toronto

BRASS AND BRONZE WIRE

*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

BRASS, BRONZE AND ALUMINUM LETTERS

*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS ENGRAVERS

Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS FOUNDERIES AND FINISHERS

*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.

*Tallman Brass & Metal Co., Hamilton, Ont.

*United Brass & Lead, Ltd., Toronto

BRASS GOODS

*Penberthy Injector Co., Ltd., Windsor.

*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.

*Mueller Mfg. Co., Sarnia.

*The Garth Co., Montreal, Que.

*The James Morrison Brass Mfg. Co., Ltd., Toronto.

*The Kerr Engine Co., Ltd., Walkerville, Ont.

*Tallman Brass & Metal Co., Hamilton, Ont.

*United Brass & Lead Ltd., Toronto.

BRASS PLATES

*Geo. Booth & Son., Toronto.

*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS RODS

*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS RODS, SHEETS AND PLATES

*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

BRASS SIGNS AND MEMORIALS

*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS TUBING, seamless

*Canadian Seamless Wire Co., Ltd., Toronto.

*Tallman Brass & Metal Co., Hamilton, Ont.

*Tallman Brass & Metal Co., Hamilton, Ont.

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*Tallman Brass & Metal Co., Hamilton, Ont.

BRONZE, SHEETS, RODS, PLATES

*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

BRUSHES

Simms, T. S., & Co., Limited, St. John, N.B.

Stevens-Hepner Co., Limited, Port Elgin, Ont.

BRUSHES, carbon

Canadian National Carbon Co., Ltd., Toronto.

BUCKET TANKS

*Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.

*The Bennett & Wright Co., Ltd., Toronto, Ont.

BUCKLES, shoe and coat

Parmenter & Bulloch Co., Limited, Gananoque, Ont.

BUILDING BLOCKS, vitrified, salt glazed

Standard Clay Products, Ltd., St. Johns, Que.

Toronto.

BUILDING FELT and PAPER

*Eureka Mineral Wool & Asbestos Co., Toronto.

*The Barrett Co., Ltd., Toronto and Montreal.

BURLAPS

The Canadian Bag Co., Limited, Montreal, Que.

*Seythes & Co., Ltd., Toronto.

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*Seythes & Co., Ltd., Toronto.

CARBONS, Electric

Canadian National Carbon Co., Ltd., Toronto.

CARBONS (headlight)

*Crouse-Hinds Co., Ltd., Toronto.

CARBONIC ACID GAS

Canadian Carbonate Co., Montreal.

CARD RECORD SYSTEMS

*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

CARPETS AND RUGS

Toronto Carpet Mfg. Co., Limited, Toronto.

Toronto Carpet Mfg. Co., Limited, Toronto.

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Toronto Carpet Mfg. Co., Limited, Toronto.

Toronto Carpet Mfg. Co., Limited, Toronto.

CENTRIFUGAL PUMPS

*The Goldie & McCulloch Co., Limited, Galt, Ont.

*Canadian Link-Belt Co., Toronto.

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*Canadian Link-Belt Co., Toronto.

COLORS

Brandram-Henderson, Limited.
Montreal, Que.

A. Ramsay & Son Co., Montreal,
Que.

COMBS, fine dressing and name
The Arlington Co. of Canada, Ltd.
Toronto.

COMMERCIAL STATIONERY

*Brown Bros., Ltd., Toronto.

CONCRETE COATINGS, PAINTS,

ETC.

*Beveridge Paper Co., Ltd., Mont-
real.

*Trussed Concrete Steel Co. of
Canada, Limited, Walkerville, Ont.

The Imperial Varnish & Color Co.,
Limited, Toronto.

CONDUITS FOR INTERIOR

WIRING

*Condmits Company, Ltd., Toronto.

CONDULET BOX FITTINGS

*Crouse-Hinds Co., Ltd., Toronto.

CONDULETS (Marine)

*Crouse-Hinds Co., Ltd., Toronto.

CONFECTORY

Ganong Bros., Ltd., St. Stephens,
N.B.

Moirs, Limited, Halifax, N.S.

The Montreal Biscuit Co., Montreal.

CONTAINER BOARD—strong con-

tainer

Bathurst Lumber Co., Ltd., Bath-
urst, N.B.

CONTRACTOR'S PLANT

*M. Beatty & Sons, Ltd., Welland.

*Canadian Allis-Chalmers, Limited,
Toronto.

CONVEYORS

*Canadian Link-Belt Co., Toronto.

*Canadian Mathews Gravity Carrier
Co., Toronto.

*Dodge Mfg. Co., Ltd., Toronto.

COPPER

*Eugene F. Phillips, Electrical
Works, Limited, Montreal.

*Booth-Coulter Copper & Brass Co.,
Limited, Toronto.

COPPER, SHEETS, PLATES, BARS,

RODS

*Brown's Copper and Brass Rolling
Mills, Ltd., New Toronto.

COPPER SHEETS AND PLATES

*Booth-Coulter Copper & Brass Co.,
Limited, Toronto.

*Tallman Brass & Metal Co., Ham-
ilton, Ont.

COPPERSMITHS

*Booth-Coulter Copper & Brass Co.,
Limited, Toronto.

COPPER TUBING, seamless

Canadian Seamless Wire Co., Ltd.,
Toronto.

*Booth-Coulter Copper & Brass Co.,
Limited, Toronto.

COPPER WIRE

Canadian Seamless Wire Co., Ltd.,
Toronto.

*Standard Underground Cable Co.
of Canada, Ltd., Hamilton, Ont.

CORKS

S. H. Ewing & Sons, Montreal, Que.

CORK CARPET

Dominion Oil Cloth Co., Ltd., Mont-
real, Que.

CORRUGATED PAPER BOXES

Adams Cellboard Co., Toronto.

Corrugated Paper Box Co., Ltd.,
Toronto.

*Hinde & Dauch Paper Co., To-
ronto.

*The Thompson & Norris Co. of
Canada, Ltd., Niagara Falls, Ont.

CORUNDUM, artificial

*D. A. Brebner, Ltd., Toronto.

CORSETS

Dominion Corset Co., Quebec, Que.

COTTONS

*Dominion Textile Co., Limited,
Montreal, Que.

*Montreal Cottons, Ltd., Valley-
field, P.Q.

COTTONADES

Hamilton Cotton Co., Hamilton, Ont.

COUPLEERS

*Canadian Steel Foundries, Ltd.,
Welland, Ont.

COUPLINGS

*Canadian Bond Hanger & Coup-
ling Co., Alexandria, Ont.

*Dodge Mfg. Co., Ltd., Toronto.

CRANES

*Northern Crane Works, Walk-
erville, Ont.

CRANKSHAFTS

Canada Forge Co., Ltd., Welland,
Ont.

CREAM CHEESE, Ingersoll

The Ingersoll Packing Co., Limited,
Ingersoll, Ont.

CREAM SEPARATORS AND MILK

CLARIFIERS

De Laval Dairy Supply Co., Peter-
boro, Ont.

The Renfrew Machinery Co., Ltd.,
Renfrew, Ont.

CREAMERY AND CHEESE FAC-

TORY MACHINERY AND SUP-

PLIES

De Laval Dairy Supply Co., Ltd.,
Peterboro, Ont.

CREOSOTED MATERIALS

*The Barrett Co., Ltd., Toronto and
Montreal.

CRUSHED STONE

The Hagersville Contracting Co.,
Limited, Hagersville, Ont.

CRUSHING ROLLS

*Jenckes Machine Co., Sherbrooke,
Que.

CUPOLAS

*Sheldons, Ltd., Galt, Ont.

*Northern Crane Works, Limited,
Walkerville, Ont.

CUPS, presentation

Standard Silver Co., Toronto.

CUPS, grease and oil

*The Canadian Winkley Co., Ltd.,
Windsor, Ont.

CURLED HAIR

*Delany and Pettit, Ltd., Toronto.

CURTAINS, chenille

Hamilton Cotton Co., Hamilton,
Ont.

CUTLERY

Standard Silver Co., Toronto.

CUTTERS, (Machine)

*Pratt & Whitney Co., Dundas.

DECALCOMANIA TRANSFERS

Decalcomania Co., Ltd., Toronto.

DECK PLUGS (electric marine)

*Crouse-Hinds Co., Ltd., Toronto.

DENIMS

Hamilton Cotton Co., Hamilton.

DERAILS

*Canadian Hart Wheels, Limited,
Hamilton, Ont.

DESIGNERS

Ontario Engraving Co., Hamilton,
Ont.

DESIGNERS and PRINTERS OF

BOOKLETS, ETC.

Grip, Ltd., Toronto.

DESKS

*Office Specialty Mfg. Co., Ltd.,
Newmarket, Ont.

DESSICATED VEGETABLES

Grahams Limited, Belleville.

DINING ROOM SUITES

The George McLagan Furniture
Co., Limited, Stratford, Ont.

DIES

*Butterfield & Co., Rock Island,
P.Q.

*Pratt & Whitney Co., Dundas.

*John Whitfield Co., Toronto.

DISINFECTING APPARATUS

Spramotor Co., London, Ont.

DOOR HANGERS

*Richards Wilcox Canadian Co.,
Ltd., London, Ont.

DREDGES

*M. Beatty & Sons, Limited, Wel-
land, Ont.

DRESSING, belt,

Sadler & Haworth, Montreal, Que.

DRESS AND CLOAK TRIMMINGS

J. Henry Peters Co., 1 Mincing St.,
Toronto.

DRIFT BOLT DRIVERS

*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

DRILL PRESSES

*Canada Machinery Corporation,
Limited, Galt, Ont.

DRILL SHARPENERS

*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

DRILLS

*John Morrow Screw & Nut Co.,
Limited, Ingersoll, Ont.

*Pratt & Whitney Co., Dundas.

DRILLS, core

*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

DRILLS, pneumatic

*Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.

DRILLS, rock

*Canadian Ingersoll Rand Co.,
Montreal, Que.

DRIFT BOLTS OR SPIKES

London Rolling Mill Co., Limited,
London, Ont.

DROP FORGINGS

*Canadian Billings & Spencer, Ltd.,
Welland, Ont.

DROP HAMMERS

*Canada Machinery Corporation,
Limited, Galt, Ont.

DRUMS, steel, and containers

*Smart-Turner Machine Co., Ltd.,
Hamilton, Ont.

DRY COLORS

P. D. Dods & Co., Ltd., Montreal.

The Imperial Varnish & Color Co.,
Limited, Toronto.

R. C. Jamieson & Co., Ltd., Mon-
treal, Que.

Standard Paint & Varnish Co.,
Ltd., Windsor, Ont.

DUMB WAITERS

Turnbull Elevator Mfg. Co., To-
ronto.

DURABLE WIRE ROPE

The Dominion Wire Rope Co., Ltd.,
Montreal, Que.

DYNAMITE

Canadian Explosives, Limited, Mon-
treal, Que.

DYNAMOS

Consolidated Electric Co., Limited,
Toronto.

*Jones & Moore Electric Co., Ltd.,
Toronto.

*The Canadian Crocker-Wheeler
Co., Limited, St. Catharines, Ont.

DYNAMOS, plating

*Jones & Moore Electric Co., Ltd.,
Toronto.

EIDERDOWN

Galt Knitting Co., Ltd., Galt.

ELECTRIC APPLIANCES

*Canadian Crocker-Wheeler Co.,
Limited, St. Catharines, Ont.

*Canadian Westinghouse Co., Ltd.,
Hamilton, Ont.

ELECTRIC APPLIANCES, fibre, all

purposes

*Beveridge Paper Co., Limited,
Montreal.

ELECTRICAL COMPOUNDS

Standard Paint Co. of Canada, Ltd.,
Montreal, Que.

ELECTRIC COOKING APPLI-

ANCES

*Canadian General Electric Com-
pany, Ltd., Toronto.

ELECTRIC LAMPS

Packard Electric Co., Ltd., Toronto.

ELECTRIC PLATE WARE

Roden Bros., Ltd., Toronto.

ELECTRIC BRANDING TOOLS

*The Clemens Electrical Corpora-
tion of Canada, Ltd., Hamilton, Ont.

ELECTRIC RAILWAY EQUIPMENT

*Crouse-Hinds Co., Ltd., Toronto.

ELECTRODES, Carbon

Canadian National Carbon Co.,
Ltd., Toronto.

ELECTROPLATING

*United Brass & Lead, Ltd., Toronto

ELECTRO PLATING

Central Press Agency, Toronto.

ELECTRICAL SUPPLIES

*Canadian General Electric Com-
pany, Ltd., Toronto.

*Canadian Westinghouse Co., Ltd.,
Hamilton, Ont.

*Jones & Moore Electric Co., Ltd.,
Toronto.

*Northern Electric Co., Limited,
Montreal, Que.

ELECTRIC SOLDERING IRON

*The Clemens Electrical Corpora-
tion of Canada, Ltd., Hamilton, Ont.

ELECTRO-SILVER PLATED

WARE

Standard Silver Co., Toronto.

ELEVATING MACHINERY

*Canadian Link-Belt Co., Toronto.

*Canadian Mathews Gravity Carrier
Co., Toronto.

ELEVATORS

*Jenckes Machine Co., Sherbrooke.

*Mackinnon, Holmes & Co., Ltd.,
Sherbrooke, P.Q.

Turnbull Elevator Manufacturing
Company, Toronto.

*The Waterous Engine Works Co.,
Ltd., Brantford, Ont.

*Northern Crane Works, Limited,
Walkerville, Ont.

ELEVATORS FOR ALL PUR-

POSES

*The Waterous Engine Works Co.,
Limited, Brantford, Ont.

ELEVATOR GATES AND DOORS

Turnbull Elevator Mfg. Co., Ltd.,
Toronto.

*The A. B. Ormsby Co., Limited,
Toronto.

ELEVATOR GUARDS

*The Geo. B. Meadows, Toronto

Iron and Brass Goods Works Co.,
Limited, Toronto.

*Canada Wire and Iron Works,
Hamilton, Ont.

ELEVATORS, hydraulic and electric

John McDougall Caledonian Iron
Works Co., Ltd., Montreal, Que.

EMERY DRESSERS and STANDS

*Canadian Hart Wheels, Limited,
Hamilton, Ont.

EMERY GRINDERS

*Canadian Hart Wheels, Limited,
Hamilton, Ont.

EMERY WHEELS

*Canadian Hart Wheels, Limited,
Hamilton, Ont.

EMERY WHEEL GUARDS

*Canadian Hart Wheels, Limited,
Hamilton, Ont.

ENAMELS

R. C. Jamieson & Co., Limited,
Montreal, Que.

The Imperial Varnish & Color Co.,
Ltd., Toronto.

ENAMEL MANUFACTURERS AND

DECORATORS

Standard Paint & Varnish Co.,
Ltd., Windsor, Ont.

ENAMEL AND TIN WARE

McClary Mfg. Co., London, Ont.

ENGINES

*E. Leonard & Sons, London, Ont.

*Goldie & McCulloch Co., Limited,
Galt, Ont.

J. & R. Weir, Montreal, Que.

*Jenckes Machine Co., Sherbrooke,
Que.

*Polson Iron Works, Limited, To-
ronto.

*Sheldons, Ltd., Galt, Ont.

*The Waterous Engine Works Co.,
Limited, Brantford, Ont.

ENGINES, gas and gasoline

*Canadian Fairbanks-Morse Com-
pany, Ltd., Montreal, Que.

*Goold-Shapley-Muir Co., Limited,
Brantford, Ont.

*Hamilton Motor Works Ltd.,
Hamilton.

*Massey-Harris Co., Ltd., Toronto.

EXCELSIOR

*Delany & Pettit, Ltd., Toronto.

EXCELSIOR PADS*Delany & Pettit, Ltd., Toronto.
Parmenter & Bulloch Co., Limited,
Gananoque, Ont.**EXPERTS IN PATENT CAUSES**

Ridout & Maybee, Toronto.

EXPLOSIVES, high

Canadian Explosives Ltd., Montreal.

FACE PLATE JAWS

Ker & Goodwin, Brantford, Ont.

FACTORY SUPPLIES, cheese and creameryDe Laval Dairy Supply Co., Ltd.,
Montreal, Que.**FANS***Sheldons, Limited, Galt, Ont.
*The Canadian Blower & Forge Co.,
Limited, Kitchener, Ont.**FASTENERS, belt**

*Saddler & Haworth, Montreal, Que.

FELTS, pulp and paper makers

Ayers Limited, Lachute Mills, P.Q.

*Beveridge Paper Co., Limited,
Montreal.**FENCES AND GATES***Dennis Wire & Iron Works Co.,
London, Ont.*Canada Wire and Iron Works,
Hamilton, Ont.**FENCING AND GATES, woven wire***Canada Wire and Iron Goods Co.,
Hamilton, Ont.**FENCING, wire**C. H. Johnson & Sons, Limited,
Montreal, Que.**FIBRE PAIRS***The E. B. Eddy Co., Ltd., Hull,
Que.**FIBRE, VULCANIZED, hard and flexible***Beveridge Paper Co., Limited,
Montreal.**FILES**Henry Disston & Sons, Limited,
Toronto.

*The Nicholson File Co., Port Hope.

FILING CABINETS

*Office Specialty Co., Newmarket.

FILING EQUIPMENT, wood & steel*Office Specialty Mfg. Co., Ltd.,
Newmarket, Ont.**FILING SYSTEMS***Office Specialty Mfg. Co., Ltd.,
Newmarket, Ont.**FILTER PAPERS***Beveridge Paper Co., Limited,
Montreal.**FIRE ALARMS***Northern Electric Co., Limited,
Montreal, Que.**FIRE APPARATUS**

*R. S. Bickle Co., Woodstock, Ont.

FIRE BRICKDominion Fire Brick and Clay Pro-
ducts, Ltd., Moose Jaw**FIRE BRICK AND CEMENT***Beveridge Paper Co., Ltd., Mon-
treal**FIRE BRICK AND CLAY**The Dominion Fire Brick and Clay
Products, Ltd., Moose Jaw, Sask.**FIRE BRICK, JOINTLESS***Beveridge Paper Co., Ltd., Mont-
real**FIRECLAY**

*Jas. W. Foley & Co., St. John, N.B.

FIRE DOOR HARDWARE*Richards Wilcox Canadian Co.,
Limited, London, Ont.**FIRE DOORS**

*A. B. Ormsby Co., Ltd., Toronto.

*The Pedlar People Limited,
Oshawa.**FIRE ENGINES**

*R. S. Bickle Co., Woodstock, Ont.

Waterous Engine Works Co., Lim-
ited, Brantford, Ont.**FIRE ESCAPES***Canada Wire and Iron Goods Co.,
Hamilton, Ont.*Dennis Wire & Iron Works Co.,
London, Ont.*McGregor & McIntyre, Ltd., To-
ronto**FIRE EXTINGUISHERS**

*A. B. Ormsby Co., Ltd., Toronto.

*Booth-Coulter Copper and Brass
Co., Limited, Montreal, Que.*The Bennett & Wright Co., Ltd.,
Toronto, Ont.**FIRE FIGHTING APPARATUS***The Waterous Engine Works Co.,
Limited, Brantford, Ont.**FIRE HOSE***Canadian Consolidated Rubber
Co., of Canada, Limited, Montreal,
Que.Dunlop Tire & Rubber Goods Co.,
Ltd., Toronto.*Gutta Percha and Rubber, Ltd.,
Toronto.**FIRE PREVENTION MATERIAL***Chicago Bridge & Iron Works,
Bridgeburg, Ont.*Eureka Mineral Wool & Asbestos
Co., Toronto.*The Bennett & Wright Co., Ltd.,
Toronto, Ont.**FIRE PROOF WINDOWS AND DOORS**

*A. B. Ormsby Co., Ltd., Toronto.

*Pedlar People, Ltd., Oshawa, Ont.

*Trussed Concrete Steel Co. of
Canada, Limited, Walkerville, Ont.**FIRE SPRINKLER SYSTEMS***Chicago Bridge & Iron Works,
Bridgeburg, Ont.*The Bennett & Wright Co., Ltd.,
Toronto, Ont.

*Purdy Mansell Co., Toronto.

*H. G. Vogel Co., Montreal, Que.

FIRE AND WATER DEPARTMENT SUPPLIES*Chicago Bridge & Iron Works,
Bridgeburg, Ont.

The Garth Co., Montreal, Que.

FISH, Atlantic Sea-FoodsMaritime Fish Corporation Ltd.,
Montreal, Que.**FITTINGS FOR SOIL PIPE**

Anthes Foundry, Ltd., Toronto.

FITTINGS, steam

Warden King, Ltd., Montreal, Que.

FIXTURES

*Crouse-Hinds Co., Ltd., Toronto.

FLAGS

*Scythes & Co., Limited, Toronto.

FLEXIBLE COUPLINGS*Canadian Bond Hanger & Coup-
ling Co., Alexandria, Ont.**FLOODLIGHTS (electric)**

*Crouse-Hinds Co., Ltd., Toronto.

FLOORING, hardwoodSeaman Kent Co., Ltd., Meaford,
Ont.**FLOUR MILL MACHINERY***Canadian Allis-Chalmers, Limited,
Toronto.**FLUE LINERS**Standard Clay Products, Ltd., St.
Johns, Que.**FORGES***Canadian Blower & Forge Co., Ltd.,
Kitchener, Ont.

*Sheldons, Limited, Galt, Ont.

FORGINGS

Canada Forge Co., Ltd., Welland.

*The Steel Co. of Canada, Limited,
Hamilton, Ont.**FORGINGS, drop***Canadian Billings & Spencer, Ltd.,
Welland, Ont.*Dominion Forge and Stamping
Co., Walkerville, Ont.**FOUNDRY EQUIPMENT***Northern Crane Works, Limited,
Walkerville, Ont.**FOUNTAIN FRUITS and Juices**

J. J. McLaughlin, Ltd., Toronto.

FOUNTAINS, drinking

*Mueller Mfg. Co., Ltd., Sarnia.

FRICTION CLUTCH PULLEYS

*Dodge Mfg. Co., Ltd., Toronto.

FROGS AND CROSSINGS, manganeseCanadian Ramapo Iron Works, Ltd.,
Niagara Falls, Ont.**FUEL**

Standard Fuel Co., Toronto.

FUR GARMENTS, men's and women's

Holt, Renfrew, Ltd., Quebec.

FUR GOODSJohn W. Peak & Co., Limited,
Montreal, Que.**FUR TRIMMINGS, ornaments and buttons**J. Henry Peters Co., 1 Mincing St.,
Toronto.**FURNACES**

McClary Mfg. Co., London, Ont.

The Jas. Smart Mfg. Co., Limited,
Brockville, Ont.**FURNACES, oil burning***Mechanical Engineering Works,
Montreal, Que.**FURNITURE, hall**The George McLagan Furniture Co.,
Limited, Stratford, Ont.**FURNITURE, office**The Canadian Office and School
Furniture Co., Ltd., Preston, Ont.**FURNITURE, reed and rattan**Imperial Rattan Co., Ltd., Strat-
ford, Ont.**FUSE BOXES**

*Crouse-Hinds Co., Ltd., Toronto.

FUSE PLUGS AND FUSES, refillable*The Clemens Electrical Corpora-
tion of Canada, Ltd., Hamilton, Ont.**FUSES***Economy Fuse and Mfg. Co., Mon-
treal.**GALVANIZED IRON**

*A. C. Leslie & Co., Montreal.

GALVANIZED SHEETS*Dominion Sheet Metal Co., Ham-
ilton, Ont.*The A. B. Ormsby Co., Limited,
Toronto.**GALVANIZERS**Acme Stamping & Tool Works, Ltd.,
Hamilton, Ont.*Ontario Wind Engine and Pump
Co., Limited, Toronto.

*The Pedlar People, Ltd., Oshawa.

GASOLINE ENGINES*Ontario Wind & Pump Co., Ltd.,
Toronto.De Laval Dairy Supply Co., Ltd.,
Peterboro, Ont.**GASOLINE FIRE ENGINES***The Waterous Engine Works Co.,
Ltd., Brantford, Ont.**GASOLINE STORAGE SYSTEMS, special underground**

S. F. Bowser & Co., Toronto.

*Steel Trough and Machine Co., Ltd.,
Tweed, Ont.**GASOLINE***The Imperial Oil Co., Limited,
Toronto.**GAUGES***Brown Engineering Corporation,
Toronto.

*John Whitfield Co., Toronto.

GEARS, cut*Brown Engineering Corporation,
Toronto.

*Hamilton Gear & Machine, Toronto.

*Winnipeg Gear & Engineering
Co., Ltd., Winnipeg.**GEARS, noiseless fibre, also rein-
forced***Beveridge Paper Co., Limited,
Montreal.**GELATINE**Canada Gelatine Co., Ltd., Brant-
ford.**GENERATORS***Canadian Crocker-Wheeler Co.,
Ltd., St. Catharines, Ont.*Canadian Westinghouse Co., Ltd.,
Hamilton, Ont.**GENERATORS, electric***Canadian General Electric Com-
pany, Ltd., Toronto.**GINS**The Melchers Gin & Spirits Dis-
tillery Co., Ltd., Montreal, Que.**GLASSWARE**Dominion Glass Co., Limited, Mon-
treal, Que.**GLASSWARE, cut**

Roden Bros., Ltd., Toronto.

GLASS FOR BUILDINGSToronto Plate Glass Importing Co.,
Limited, Toronto.**GLASS BENDERS**Toronto Plate Glass Importing Co.,
Limited, Toronto.**GLASS, mirror**Toronto Plate Glass Importing Co.,
Limited, Toronto.**GLOVES AND MITTS**

*A. R. Clarke & Co., Ltd., Toronto.

Craig, Cowan Co., Ltd., Toronto.

GLUE

Canada Glue Co., Ltd., Brantford.

*Delany & Pettit, Ltd., Toronto.

GOLD-FILLED WIRE AND PLATECanadian Seamless Wire Co., To-
ronto.**GOLD AND SILVER REFINERS**Canadian Seamless Wire Co., To-
ronto.**GRAIN CRUSHERS (Rapid Easy)**

J. Fleury's Sons, Aurora, Ont.

GRAPE JUICE

J. J. McLaughlin, Ltd., Toronto.

The Welch Co., Ltd., St. Catharines.

GRATES*The Goldie & McCulloch Co., Ltd.,
Galt, Ont.**GRAVITY CARRIERS***Canadian Mathews Gravity Carrier
Co., Toronto.**GRILLES, metal***Canada Wire & Iron Goods Co.,
Hamilton, Ont.*Dennis Wire & Iron Works Co.,
London, Ont.**GRINDER, bench***Canadian Bond Hanger & Coup-
ling Co., Alexandria, Ont.**GRINDERS, portable***Canadian Ingersoll-Rand Co., Ltd.,
Montreal, Que.**GRINDERS, Pedestal and Bench***Canadian Hart Wheels, Limited,
Hamilton, Ont.**GRINDING and Polishing Machinery***Canadian Hart Wheels, Limited,
Hamilton, Ont.**GRINDING WHEELS***Canadian Hart Wheels, Limited,
Hamilton, Ont.*The Dominion Abrasive Wheel
Co., Limited, New Toronto.**GRINDSTONES***Richards-Wilcox Canadian Co.,
Limited, London, Ont.**GUARDS (Condulet)**

*Crouse-Hinds Co., Ltd., Toronto.

GUNN SECTIONAL BOOKCASESThe Geo. McLagan Furniture Co.,
Limited, Stratford, Ont.**GUY ANCHORS**

B. J. Coghlin Co., Ltd., Montreal.

GUY RODS

*Crouse-Hinds Co., Ltd., Toronto.

GYPSPUM, crushed

*Albert Mfg. Co., Hillsborough, N.B.

GYPSPUM PRODUCTS*Manitoba Gypsum Co., Ltd., Win-
nipeg, Man.De Laval Dairy Supply Co., Ltd.,
Peterboro, Ont.**HACK SAW BLADES and FRAMES***E. C. Atkins & Co., Inc., Hamil-
ton, Ont.**HACK SAW MACHINES***E. C. Atkins & Co., Inc., Hamil-
ton, Ont.**HALL FURNITURE**The Geo. McLagan Furniture Co.,
Limited, Stratford, Ont.**HAMS**F. W. Fearman Co., Ltd., Hami-
ton, Ont.**HANDLES (Axe, pick, sledge ham-
mers, etc.)**The Lachute Shuttle Co., Limited,
Lachute Mills, P.Q.**HANDLES, wood***Toy Products Ltd., Farm Point,
P.Q.**HAND SAWS***E. C. Atkins & Co., Inc., Hamil-
ton, Ont.**HANGERS***Canadian Bond Hanger & Coup-
ling Co., Alexandria, Ont.

*Dodge Mfg. Co., Ltd., Toronto.

*The Goldie & McCulloch Co., Ltd.,
Galt, Ont.**HARDWARE***Richards-Wilcox Canadian Co.,
Limited, London, Ont.

Taylor-Forbes Co., Limited, Guelph.

The Jas. Smart Mfg. Co., Limited,
Brockville, Ont.**HARDWOOD FLOORING**Wilson Bros. Limited, Collingwood,
Ont.**HARDWOOD INTERIOR FINISH**Wilson Bros., Ltd., Collingwood,
Ont.**HARDWOOD VENEER DOORS TO
DETAIL**Wilson Bros., Ltd., Collingwood,
Ont.**HARNESS**

Lamontagne Ltd., Montreal, Que.

HATS, men's strawThe Crown Hat Co., Limited, Galt,
Ont.**HATS, ladies' and children's straw**The Crown Hat Co., Limited, Galt,
Ont.**HATS, ladies' and children's felt
and beaver**

HEATERS

*Watrous Engine Works Co., Ltd., Brantford, Ont.

HEATERS, feed water

*Darling Bros., Ltd., Montreal.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

HEATING APPLIANCES

*C. A. Dunham Co., Ltd., Toronto.
*Darling Bros., Ltd., Montreal.
*Sheldons, Limited, Galt, Ont.
*The Canadian Blower & Forge Co., Limited, Kitchener, Ont.

HEATING SYSTEMS

*C. A. Dunham Co., Ltd., Toronto.

HEMLOCK, union and oak sole
Breithaupt Leather Co., Ltd., Kitchener, Ont.

HESSIANS

The Canadian Bag Co., Limited, Montreal, Que.
*Scythes & Co., Limited, Toronto.

HINGES

*The Steel Co. of Canada, Limited, Hamilton, Ont.

HOISTS

*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOISTS, electric and pneumatic

*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
*M. Beatty & Sons, Ltd., Welland, Ont.

*Northern Crane Works, Limited, Walkerville, Ont.

HOISTING MACHINERY

*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOSE, fire

*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd., Toronto.

HOSE, half, Imperial

Kingston Hosiery Co., Ltd., Kingston, Ont.

HOSE, rubber

*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Limited, Toronto.

HYDRAULIC PRESSES

*Bawden Machine Co., Limited, Toronto.

*William R. Perrin, Ltd., Toronto.

HYDRO ELECTRIC PLANTS

*Canadian Allis-Chalmers, Limited, Toronto.

ICE CREEPERS

Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ICE-MAKING MACHINERY

The Linde Canadian Refrigeration Co., Limited, Montreal, Que.

INCUBATORS & BROODERS

Lee Mfg. Co., Ltd., Pembroke, Ont.

INGOT METALS

*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

INJECTORS, automatic and autopoitive

Penberthy Injector Co., Limited Windsor, Ont.

INSERTED TOOTH SAWS

*E. C. Atkins & Co., Inc., Hamilton, Ont.

INSULATING COMPOUNDS

The Imperial Varnish & Color Co., Ltd., Toronto.

INSULATING PAPER AND FIBRE

*Beveridge Paper Co., Limited, Montreal.

INSULATORS

*Crouse-Hinds Co., Ltd., Toronto.

INTERLOCKING RUBBER TILING

*Gutta Percha & Rubber Mfg. Co. of Toronto, Limited, Toronto.

INVERTS

Standard Clay Products, Ltd., St. Johns, Que.

IRON

*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.

IRON, refined bar

Starr Mfg. Co., Ltd., Dartmouth, N.S.

IRON AND STEEL BARS

*Burlington Steel Co., Ltd., Hamilton, Ont.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

IRON STAIRWAYS

*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*McGregor & McIntyre, Ltd., Toronto.

IRONWORK, architectural

*Canadian Allis-Chalmers, Limited, Toronto.

*Canada Wire & Iron Goods Co., Hamilton, Ont.

IRONWORK, ornamental

*Canada Wire & Iron Goods Co., Hamilton, Ont.

IRON, LEAD AND PUTTY

A. R. Whittall, Montreal, Que.

JACKS

Globe Engineering Co., Ltd., Hamilton

JAM, canned goods, etc.

E. D. Smith & Son, Limited.

JAPANS, enamels, etc.

A. Muirhead Co., Ltd., Toronto.
The Imperial Varnish & Color Co., Ltd., Toronto.

JIGS AND TOOLS

*Brown Engineering Corporation, Toronto.

JOINTERS

*Canada Machinery Corporation, Limited, Galt, Ont.

*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

JELLY POWDER

S. H. Ewing & Sons, Montreal, Que.

JEWELRY, enamelled souvenir

Caron Bros., Montreal, Que.

JEWELRY, gold-filled

Caron Bros., Montreal, Que.

JOIST HANGERS

*Richards-Wilcox Canadian Co., Limited, London, Ont.

JUNCTION BOXES, cable

*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

KELSEY WARM AIR GENERATOR

The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

KILNS

*Sheldons, Limited, Galt, Ont.

KINDLING

Standard Fuel Co., Toronto.

KNIFE GRINDERS

*Canada Machinery Corporation, Limited, Galt, Ont.

*W. H. Banfield & Sons, Toronto.

KNITTED GOODS

*Penman's, Limited, Paris, Ont.

KNIVES

*Galt Knife Co., Ltd.
*The Peter Hay Knife Co., Limited, Galt, Ont.

Simonds Canada Saw Co., Limited, Montreal, Que.

KNIVES, pulp and paper

Henry Disston and Sons, Toronto.

*The Peter Hay Knife Co., Limited, Galt, Ont.

KODAKS AND PHOTOGRAPHIC SUPPLIES

Canadian Kodak Co., Ltd., Toronto

LABELS

Lawson & Jones, Ltd., London, Ont.

LABELS, lithographed

Harris Lithographing Co., Toronto

LACE LEATHER

F. C. McCordick, St. Catharines, Ont.

*Sadler & Haworth, Montreal, Que.

*The D. K. McLaren Belting Co., Limited, Montreal, Que.

*The J. C. McLaren Belting Co., Limited, Montreal, Que.

LADDERS

Stratford Mfg. Co., Ltd., Stratford, Ont.

LADDERS, step.

*Otterville Mfg. Co., Ltd., Otterville, Ont.

LADLES, foundry

*Northern Crane Works, Limited, Walkerville, Ont.

LAMP GLOBES

*Crouse-Hinds Co., Ltd., Toronto.

LARD

F. W. Fearman Co., Ltd., Hamilton, Ont.

LATH

The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

LATHE CHUCKS

Ker & Goodwin, Brantford, Ont.

LATHE-DOGS

Canadian Billings & Spencer, Ltd., Welland, Ont.

LATHES

*Canada Machinery Corporation, Limited, Galt, Ont.

LAUNCHES

Peterboro Canoe Co., Ltd., Peterboro, Ont.

LAWN MOWERS

Taylor-Forbes Co., Limited, Guelph, Ont.

LAWN SWINGS

Stratford Mfg. Co., Ltd., Stratford, Ont.

LAVATORIES, enameled

Amherst Foundry Co., Limited, Amherst, N.S.

LAUNDRY SINKS

Amherst Foundry Co., Limited, Amherst, N.S.

LEAD GRINDERS

Benjamin Moore & Co., Limited, Toronto.

LEAD SHEET

Toronto Plate Glass Importing Co., Limited, Toronto.

LEAD PIPE

*The Steel Co. of Canada, Limited, Hamilton, Ont.

Toronto Plate Glass Importing Co., Limited, Toronto.

*The Canada Metal Co., Toronto.

*United Brass & Lead, Ltd., Toronto

LEATHER

The Robson Leather Co., Limited, Oshawa, Ont.

LEATHER, bookbinders'

Clarke & Clarke, Ltd., Toronto.

LEATHER, fancy

Clarke & Clarke, Ltd., Toronto.

LEATHER GOODS

Lamontagne, Ltd., Montreal, Que.

LEATHER, hemlock, union and oak sole

The Breithaupt Leather Co., Ltd., Kitchener, Ont.

LEATHER, patent colt and side leather

*A. R. Clarke & Co., Ltd., Toronto.

LEATHER, sheep skin, etc.

Clarke & Clarke, Ltd., Toronto.

LEATHER, upholstering

Clarke & Clarke, Ltd., Toronto.

LEATHER, upper

A. Davis & Son, Ltd., Kingston, Ont.

LIGHTS (marine, side and port)

*Crouse-Hinds Co., Ltd., Toronto.

LINK BELT, Ewart, and sawmill riveted

*Canadian Link-Belt Co., Toronto.

LINK BELTING

*The Dodge Mfg. Co., Ltd., Toronto.

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

LINOLEUM

Dominion Oil Cloth Co., Limited, Montreal, Que.

LITHOGRAPHED BUSINESS STATIONERY

Business Systems, Ltd., Toronto.

LITHOGRAPHED TIN WARE

*MacDonald Mfg. Co., Limited, Toronto.

LITHOGRAPHERS

American Bank Note Company, Ottawa, Ont.

Harris Lithographing Co., Toronto.

LOCKERS

*Canada Wire & Iron Works Co., Hamilton, Ont.

*Dennis Wire & Iron Works Co., London, Ont.

*Geo. B. Meadows, Wire, Iron and Brass Works Co., Toronto.

LOCOMOTIVE BLOCKS

Standard Clay Products, Limited, St. Johns, Que.

LOCOMOTIVES, industrial

*Montreal Locomotive Works, Ltd., Montreal, Que.

LOCOMOTIVE & MARINE BRASS WORKS

The James Morrison Brass Mfg. Co., Limited, Toronto.

*United Brass & Lead, Ltd., Toronto

LOOSE LEAF, BINDERS AND FORMS

Business Systems, Ltd., Toronto.

LOOSE LEAF SYSTEMS

Copeland-Chatterton Co., Limited, Brampton, Ont.

LOOSE LEAF SUPPLIES

The Fadale Press, Ltd., Edmonton.

LUBRICATORS, steam sight feed

Penberthy Injector Co., Limited, Windsor, Ont.

LUGS, for silos and water tanks

*Ontario Wind Engine & Pump Co., Ltd., Toronto.

*Otterville Mfg. Co., Ltd., Otterville, Ont.

LUMBER

*Brown Corporation, La Tuque, Que.

The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

G. & J. Esplen, Montreal, Que.

LUMBER, asbestos

*Eureka Mineral Wool & Asbestos Co., Toronto.

LUMBER, spruce and pine, cedar railway ties and shingles

Bathurst Lumber Co., Ltd., Bathurst, N.B.

LUMBERING BLANKETS

Slingsby Mfg. Co., Ltd., Brantford, Ont.

LUMBER, red pine and spruce

Gillies Bros., Ltd., Braeside, Ont.

LUMBER, spruce, fir, larch and cedar

Fernie Lumber Co., Ltd., Fernie, B.C.

LUMBER, white pine

Gillies Bros., Ltd., Braeside, Ont.

MACHINE KNIVES

*Galt Knife Co., Ltd.

*E. C. Atkins & Co., Inc., Hamilton, Ont.

Henry Disston and Sons, Toronto

MACHINE TOOLS

*Canada Machinery Corporation, Limited, Galt, Ont.

*John Bertram & Sons Co., Ltd., Dundas, Ont.

*United Brass & Lead, Ltd., Toronto

*United Brass & Lead, Ltd., Toronto

MACHINE WORK, special and repairs

*Canadian Rumely Co., Limited, Toronto, Ont.

MACHINERY AND UTENSILS FOR BAKERS

Fletcher Mfg. Co., Ltd., Toronto.

MACHINERY AND UTENSILS FOR CANDY

Fletcher Mfg. Co., Ltd., Toronto.

MACHINERY AND UTENSILS FOR ICE CREAM

Fletcher Mfg. Co., Ltd., Toronto.

MACHINERY, conveying

*Canadian Link-Belt Co., Toronto.

*Canadian Mathews Gravity Carrier Co., Limited, Toronto.

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

MACHINERY, flour mill

*Canadian Fairbanks-Morse Company, Ltd., Montreal, Que.

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

MACHINERY, grinding

*Canadian Hart Wheels, Limited, Hamilton, Ont.

MACHINERY, hoisting, etc.

*Polson Iron Works, Limited, Toronto.

J. & R. Weir, Montreal, Que.

*M. Beatty & Sons, Ltd., Welland.

*Northern Crane Works, Limited, Walkerville, Ont.

MACHINERY, ice cream

J. J. McLaughlin, Ltd., Toronto.

MACHINERY, iron working

*Canada Machinery Corporation, Limited, Galt, Ont.

*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, pulp mill

*The Watrous Engine Works Co., Limited, Brantford, Ont.

MACHINERY, punching and shearing.

MACHINERY, special

Bawden Machine Co., Limited, Toronto.

MACHINERY, transmission

*Canadian Bond Hanger and Coupling Co., Ltd., Alexandria, Ont.
 *Dodge Mfg. Co., Ltd., Toronto.
 *Goldie & McCulloch Co., Limited, Galt, Ont.

MACHINERY, woodworking

*Canada Machinery Corporation, Limited, Galt, Ont.
 *Yates, P. B., Machine Co., Ltd., Hamilton, Ont.
 Preston Woodworking Machinery Co., Ltd., Preston.
 *The Watrous Engine Works Co., Limited, Brantford, Ont.

MACHINE WORK, special and repairs

*Canadian Rumely Co., Ltd., Toronto, Ont.

MACHINE WRENCHES

*Canadian Billings & Spencer, Ltd., Welland, Ont.

MACHINES, painting

Spramotor Co., London, Ont.

MAGNESITE

*Canadian Carbonate Co., Limited, Montreal, Que.

MALT

*Hiram Walker & Sons, Limited, Walkerville, Ont.

MAPLE PRODUCTS

*Maples, Limited, Toronto.

MARTINGALE RINGS AND SLIDE

LOOPS

The Arlington Co. of Canada, Ltd., Toronto.

MATCHERS

*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

MATCHES

*The E. B. Eddy Co., Ltd., Hull.

MECHANICAL STOKERS

*The Jones Underfeed Stoker Co., Ltd., Toronto.

MEDICINES, patented and pharmaceutical

Dr. Ed. Morin & Cie., Ltd., Quebec.

METAL, babbit

*Canada Metal Co., Toronto.

*Tallman Brass and Metal Co., Hamilton, Ont.

Alonzo W. Spooner, Limited, Port Hope, Ont.

METAL CEILINGS

*The Pedlar People Limited, Oshawa.

*The A. B. Ormsby Co., Limited, Toronto.

METAL LATH

*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

*The Pedlar People Limited, Oshawa.

METAL PACKING

*Garlock Packing Company, Hamilton, Ont.

METAL, spinning and stamping

The Booth-Coulter Copper and Brass Co., Limited, Toronto.

METAL SAWS

*E. C. Atkins & Co., Inc., Hamilton, Ont.

METAL SHINGLES

*The Pedlar People, Limited, Oshawa.

*The A. B. Ormsby Co., Limited, Toronto.

MILK DEALERS' MACHINERY AND SUPPLIES

De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

MILLBOARD, asbestos

*Eureka Mineral Wool & Asbestos Co., Toronto.

MILLING CUTTERS

Pratt and Whitney Company of Canada, Dundas, Ont.

MINING MACHINERY

*Canadian Allis-Chalmers, Limited, Toronto.

MITTS AND GLOVES (Indian, tan, red deerskins)

Holt, Renfrew Ltd., Quebec, Que.

A R Clarke & Co. Ltd., Toronto.

MIXERS, chocolate, dough and paint

Fletcher Mfg. Co., Ltd., Toronto.

MOCCASINS AND SLIPPERS

(Indian tanned leathers)

Holt Renfrew Ltd., Quebec, Que.

MORTISERS

*Canada Machinery Corporation, Limited, Galt, Ont.

*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

MOTOR CARS

*Ford Co. of Canada, Ford, Ont.

MOTORS, electric

*Canadian General Electric Company, Ltd., Toronto.

MOTORS, electric (alternating current)

*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
 Consolidated Electric Co., Limited, Toronto.

*Jones & Moore Electric Co., Ltd., Toronto.

*Canadian Crocker-Wheeler Co., Ltd., St. Catharines, Ont.

*T. & H. Electric Co., Hamilton.

MOTORS, electric (direct current)

*Canadian Westinghouse Co., Ltd., Hamilton, Ont.

Consolidated Electric Co., Limited, Toronto.

*Jones & Moore Electric Co., Ltd., Toronto.

*T. & H. Electric Co., Hamilton.

MOTORS, electric (repairing)

Consolidated Electric Co., Limited, Toronto.

*T. & H. Electric Co., Hamilton.

MOTORS, pneumatic

*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

MOULDERS

*Canada Machinery Corporation, Limited, Galt, Ont.

*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

NAILS

*The Steel Co. of Canada, Limited, Hamilton, Ont.

NAILS, copper

Parmenter and Bullock Co., Ltd., Gananoque, Ont.

NAILS, wire

Parmenter and Bullock Co., Ltd., Gananoque, Ont.

The Graham Nail Works, Toronto.

NAPHTHA

*The Imperial Oil Co., Limited, Toronto.

NICKEL OXIDE

Coniagas Reduction Co., Limited, St. Catharines, Ont.

NUTS

*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.

*The National Acme Mfg. Co., Montreal, Que.

*The Steel Co. of Canada, Limited, Hamilton, Ont.

*United Brass & Lead, Ltd., Toronto

OAKUM, plumbers, Canadian Navy

Factory Waste and Metal Co., Montreal, Que.

*Scythes & Co., Ltd., Toronto.

OAT CRUSHERS AND FLAKERS

J. Fleury's Sons, Aurora, Ont.

OFFICE DESKS

*Goderich Organ Co., Goderich, Ont.

OFFICE EQUIPMENT

*Office Specialty Co., Newmarket, Ont.

OFFICE FURNITURE

*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

OILS

Brandram-Henderson, Ltd., Montreal, Que.

A. Ramsay & Son Co., Montreal.

Sherwin-Williams Co. of Canada, Limited, Montreal, Que.

OIL FILTRATION AND CIRCULATING SYSTEMS

S. F. Bowser & Co., Toronto.

OIL STORAGE SYSTEMS, self-measuring

S. F. Bowser & Co., Toronto.

OIL COMPANIES

*Canadian Oil Cos., Toronto.

Commercial Oil Co., Ltd., Hamilton.

*Imperial Oil Co., Toronto.

OILS (Petroleum products)

*British American Oil Co., Limited, Toronto.

*The Imperial Oil Co., Limited, Toronto.

OILS, road

*The Barrett Co., Ltd., Toronto and Montreal.

OILCLOTHS, floor and table

Dominion Oil Cloth Co., Limited, Montreal, Que.

ORGANS

*Goderich Organ Co., Goderich, Ont.

Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

ORGANS, pipe

Casavant Freres, St. Hyacinthe, Que.

Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.

ORGANS, parlor

*Goderich Organ Co., Goderich, Ont.

ORNAMENTAL IRON WORK

*Canada Wire & Iron Goods Co., Hamilton, Ont.

*Dennis Wire & Iron Works Co., London, Ont.

*The Geo. B. Meadows, Toronto

Iron and Brass Goods Works Co., Limited, Toronto.

*McGregor & McIntyre, Ltd., Toronto.

OVERALLS

Peerless Overall Co., Rock Island, Que.

Walker Pant and Shirt Co., Walkerville and Chatham, Ont.

The Standard Shirt Co., Limited, Montreal, Que.

OVERCOATINGS

Rosamond Woollen Co., Almonte, Ont.

OVERHEAD RUNWAYS

*Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.

*Richards-Wilcox Canadian Co., Limited, London, Ont.

OXY-ACETYLENE WELDING

*L'Air Liquide Society, Montreal.

*The Prest-O-Lite Co., Inc., Toronto.

OXYGEN

*L'Air Liquide Society, Montreal.

PACKERS, parchment papers, discs, shavings

*Beveridge Paper Co., Limited, Montreal.

PACKING BOXES

Barchard & Co., Limited, Toronto.

PACKING, engine

Dunlop Tire & Rubber Goods Co., Ltd., Toronto.

*Garlock Packing Co., Hamilton.

PACKING, rubber

*Canadian Consolidated Rubber Co., Limited, Montreal, Que.

Dunlop Tire & Rubber Goods Co., Ltd., Toronto.

*Gutta Percha & Rubber, Limited, Jenkins Bros., Ltd., Montreal, Que.

PAISLS AND TUBS, wooden

The C. Beck Mfg. Co., Limited, Penetanguishene, Ont.

PAINTERS' SUPPLIES

A. Muirhead Co., Ltd., Toronto.

PAINTS

R. C. Jamieson & Co., Limited, Montreal, Que.

PAINTS and VARNISHES

A. Muirhead Co., Ltd., Toronto.

Benjamin Moore & Co., Limited, Toronto.

Standard Paint & Varnish Co., Ltd., Windsor, Ont.

The Imperial Varnish & Color Co., Limited, Toronto.

The Staneland Co., Ltd., Victoria, B.C.

A. Ramsay & Sons Co., Montreal, Que.

Standard Paint Co. of Canada, Limited, Montreal, Que.

PAINTS, barn and bridge

Standard Paint & Varnish Co., Ltd., Windsor, Ont.

PAINTS, preservative

Standard Paint Co. of Canada, Limited, Montreal, Que.

*The Barrett Co., Ltd., Toronto and Montreal.

PANELBOARDS

*Crouse-Hinds Co., Ltd., Toronto.

PAPER BAGS

*Beveridge Paper Co., Limited, Montreal.

PAPER, book

Barber Paper & Coating Mills, Ltd., Georgetown, Ont.

PAPER BOXES

King Paper Box Co., Ltd., Montreal, Que.

*Rudd Paper Box Co., Limited, Toronto.

PAPER, coated, book and label

*Provincial Paper Mills, Limited, Georgetown, Ont.

PAPER, coated box board

*Provincial Paper Mills, Limited, Georgetown, Ont.

PAPER, coated cover

*Provincial Paper Mills, Limited, Georgetown, Ont.

PAPER, envelope

Provincial Paper Mills Limited, Georgetown, Ont.

The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, enamelled blotting

*Provincial Paper Mills, Limited, Georgetown, Ont.

PAPER, kraft and all wrappings, printings and specialties

*Beveridge Paper Co., Limited, Montreal.

PAPER, label

*Provincial Paper Mills, Limited, Georgetown, Ont.

PAPER, ledger

*Howard Smith Paper Mills, Ltd., Montreal.

*Rolland Paper Co., Limited, Montreal, Que.

The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, news

*The Riordon Pulp and Paper Co., Montreal, Que.

PAPER, super-book

The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, wall

Stauntons, Ltd., Toronto.

PAPER, waxed

Business Systems, Ltd., Toronto.

PAPER, wrapping, printing and specialties

*The Riordon Pulp and Paper Co., Montreal, Que.

PAPER, writing

The Toronto Paper Manufacturing Co., Cornwall, Ont.

Howard Smith Paper Mills, Limited, Montreal.

*Rolland Paper Co., Limited, Montreal, Que.

PAPERS, bond

*Howard Smith Paper Mills, Ltd., Montreal.

*Rolland Paper Co., Ltd., Montreal, Que.

PAPERS, building

Bathurst Lumber Co., Ltd., Bathurst, N.B.

*The Riordon Pulp and Paper Co., Montreal, Que.

Standard Paint Co. of Canada, Ltd., Montreal, Que.

PARK SEATS

Stratford Mfg. Co., Ltd., Stratford, Ont.

PARLOR SUNDRIES

The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

PATENTS

Fetherstonhaugh & Co., Toronto.

Ridout and Maybee, Toronto.

PATENT LITIGATION

Ridout and Maybee, Toronto.

PAY ROLL AUDITS

*International Business Machines, Limited, Toronto.

PERFORATED METALS

*Canada Wire & Iron Goods Co., Hamilton, Ont.

PERFORATED MUSIC ROLLS

The Otto Higel Co., Ltd., Toronto.

PERFUMES AND TOILET PREPARATIONS

Sovereign Perfumes Ltd., Toronto.

PETROLEUM PRODUCTS

*The Imperial Oil Co., Limited, Toronto.

PHOTOMAILERS

*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.

PIANOS

Dominion Organ & Piano Co., Ltd., Bowmanville, Ont.

*Gourlay, Winter and Leeming, Toronto.

Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIANO ACTIONS

The Otto Higel Co., Ltd., Toronto.

PIANO KEYS

The Otto Higel Co., Ltd., Toronto.

PIAN

PIPE, cast iron, for water and gas
National Iron Works, Ltd., Toronto.

PIPE COUPLINGS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

PIPE COVERINGS
*Eureka Mineral Wood & Asbestos Co., Toronto.

PIPE ORGANS
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIPES, culvert
Standard Clay Products, Ltd., St. Johns, Que.
*The Pedlar People Limited, Oshawa.

PIPE AND NIPPLES, black and galvanized
*Canadian Tube & Iron Co., Ltd., Montreal, Que.

PIPE, sewer
Hamilton and Toronto Sewer Pipe Co., Limited, Hamilton, Ont.
Standard Clay Products, Ltd., St. Johns, Que.

PIPE, soil and fittings
Athes Foundry, Ltd., Toronto and Winnipeg.
Warden King Ltd., Montreal, Que.

PIPE AND TUBES, wrought
*Page-Hersey Iron Tube and Lead Co., Ltd., Toronto.

PISTON RODS
*The Canadian Drawn Steel Co., Limited, Hamilton, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.

PLANERS
*Canada Machinery Corporation, Limited, Galt, Ont.
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

PLANING MILLS
G. & J. Esplen, Montreal, Que.

PLASTERING TROWELS
*E. C. Atkins & Co., Inc., Hamilton, Ont.

FLOWS
J. Fleury's Sons, Aurora, Ont.

PLUGS
*Crouse-Hinds Co., Ltd., Toronto.

PLUMBERS' SUPPLIES
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Ltd., Toronto.
*United Brass & Lead, Ltd., Toronto

PLUMBING APPLIANCES
Standard Sanitary Mfg. Co., Ltd., Limited, Toronto.

PLUMBING SUPPLIES
Toronto Plate Glass Importing Co., Limited, Toronto.

PNEUMATIC DRILLS
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

PNEUMATIC MACHINERY
*Canadian Ingersoll-Rand Co., Sherbrooke, P.Q.

POLE LINE MATERIAL (wooden insulator top pins, side blocks, pole steps, cross arms)
The Lachute Shuttle Co., Limited Lachute Mills, P.Q.

POLES, Flag
*Ontario Wind Engine & Pump Co. Ltd., Toronto.

POLES, telegraph and telephone, cedar
Ferne Lumber Co., Ltd., Ferne B.C.

PORK PACKERS AND CHEESE EXPORTERS
The Ingersoll Packing Co., Limited Ingersoll, Ont.

POSTS, split cedar fence
Ferne Lumber Co., Ltd., Ferne B.C.

POULTRY SUPPLIES AND MEDICINES
Lee Mfg. Co., Ltd., Pembroke, Ont.

POWDER, blasting
Canadian Explosives, Ltd., Montreal, Que.

POWER PRESSES
Hydraulic Machinery Co., Limited, Montreal.
*William R. Perrin, Ltd., Toronto.

PRESERVATIVE PAINT
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

PRESERVATIVE PAINT FOR BOILERS
*Beveridge Paper Co., Limited, Montreal.

PRESSES, baling and filter
*William R. Perrin, Ltd., Toronto.

PRESSES, hydraulic
Hydraulic Machinery Co., Limited, Montreal.

PRESSES, sheet metal stamping
Brown, Boggs Co., Ltd., Hamilton, Ont.

*Canada Machinery Corporation, Limited, Galt, Ont.

PRESSES, veneer
*Canada Machinery Corporation, Limited, Galt, Ont.
Hydraulic Machinery Co., Limited, Montreal.
*William R. Perrin, Ltd., Toronto.

PRINTERS
Kona & Mann, Ltd., Toronto.

PRINTING AND LITHOGRAPHING
Lawson & Jones, Limited, London, Ont.

PULLEYS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Canadian Fairbanks-Morse Company, Ltd., Montreal, Que.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

PULLEYS, wood split.
*Bernard Industrial Co., Forterville, P.Q.

PULP, bleached sulphite
The Edward Partington Pulp and Paper Co., St. John, N.B.

PULP, sulphate and sulphite.
Bathurst Lumber Co., Ltd., Bathurst, N.B.

PULP
*Brown Corporation, La Tuque, Que.

PUMPS
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
*Canadian Allis-Chalmers, Limited Toronto.

*Bawden Machine Co., Ltd., Toronto.
*Canadian Fairbanks-Morse Company, Limited, Montreal, Que.
*Darling Bros., Ltd., Montreal.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
Spiramotor Co., London, Ont.

PUMPS, boiler feed
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

*Bawden Machine Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

PUMPS, centrifugal
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
*M. Beatty & Sons, Ltd., Welland, Ont.

*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*Waterous Engine Works Co., Ltd., Brantford, Ont.

PUMPS, iron
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*Waterous Engine Works Co., Ltd., Brantford, Ont.

PUMPS, turbine and reciprocating
*Bawden Machine Co., Ltd., Toronto.
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
John McDougall, Caledonian Iron Works Co., Ltd., Montreal, Que.

PUNCHES
*John Whitfield Co., Toronto.
*Pratt & Whitney Co., Dundas.

PYROMETERS
*Canadian Hoskins Co., Walkerville, Ont.

RADIATORS
Taylor-Forbes Co., Limited, Guelph, Ont.
Warden King Ltd., Montreal, Que.

RAILINGS, brass and iron
*Dennis Wire & Iron Works Co., London, Ont.
*United Brass & Lead, Ltd., Toronto

RAILS, light
Hamant Steel Car and Engineering Works, Hamilton.

RAILWAY SIGNAL APPLIANCES
General Railway Signal Co. of Canada, Ltd., Montreal, Que.

RAILWAY SUPPLIES
*Canadian Steel Foundries, Ltd., Montreal, Que.

*Chicago Bridge & Iron Works, Bridgeburg, Ont.
B. J. Cognuin Co., Ltd., Montreal, Que.

RAILWAY TARIFF BINDERS
The Esdale Press Ltd., Edmonton.

READY-TO-WEAR GARMENTS, LADIES'
H. C. Boulter Co., Ltd., Toronto.

REAMERS
*Pratt & Whitney Co., Dundas.
*Butterfield & Co., Rock Island, P.Q.

RECEPTACLES
*Crouse-Hinds Co., Ltd., Toronto.

REED AND RATTAN GOODS
Canada Furniture Mfgs., Limited, Woodstock, Ont.

REFRIGERATORS
Sanderson-Harold Co., Ltd., Paris, Ont.
Lee Mfg. Co., Ltd., Pembroke, Ont.

REFRIGERATING MACHINERY
The Linde Canadian Refrigeration Co., Ltd., Montreal, Que.

REFRIGERATORS, store, homes and institutions
Ham & Nott Co., Ltd., Brantford, Ont.
John Hillock & Co., Ltd., Toronto.

REINFORCEMENT BARS
*Burlington Steel Co., Ltd., Hamilton, Ont.
*The Steel Co. of Canada, Limited, Hamilton, Ont.
*Trussed Concrete Steel Co., Ltd., Walkerville.

REINFORCEMENT FOR CONCRETE
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

REINFORCEMENT FOR CONCRETE ROOFING, Metal.
*The Pedlar People Limited, Oshawa.
*Trussed Concrete Steel Co., Ltd., Walkerville.

REVOLVING DOORS
*A. B. Ormsby Co., Ltd., Toronto.

RINGS, gold
Caron Bros., Montreal, Que.

RIVETERS, pneumatic
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

RIVETS
*Canadian Tube & Iron Co., Ltd., *The Steel Co. of Canada, Limited, Hamilton, Ont.
*Stowell Screw Co., Ltd., Montreal.

RIVETS, bifurcated and tubular
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

RIVETS AND BURS, iron, copper and brass
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ROCK DRILLS
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

ROLL PRINTING
*Autographic Register Co., Ltd., Montreal.
Business Systems, Ltd., Toronto.

ROOFING, metal
*The A. B. Ormsby Co., Limited, Toronto.

ROOFING, ready to lay
Standard Paint Co. of Canada, Ltd., Montreal, Que.
*The Barrett Co., Ltd., Toronto and Montreal.

ROOFINGS, plastic and liquid
*Beveridge Paper Co., Limited, Montreal.

ROOF TRUSSES
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*Dominion Bridge Co., Ltd., Montreal, Que.

ROPE
*Doon Twines Ltd., Doon, Ont.
*Shurly & Deitrich, Ltd., Toronto.

ROPE, cotton
Hamilton Cotton Co., Hamilton, Ont.

RUBBER FOOTWEAR
Ames Holden, McCready, Limited, Montreal, Que.
*Gutta Percha & Rubber, Ltd.
The Miner Rubber Co., Limited, Granby, Que.

RUBBER GOODS
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd.

RUBBER MOULDS
Bawden Machine Co., Ltd., Toronto.

RUBBER PACKING
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Garlock Packing Company, Hamilton, Ont.

RULES
The Lufkin Rule Co. of Canada, Ltd., Windsor, Ont.

SADDLERY HARDWARE
*Dominion Forge and Stamping Co., Walkerville, Ont.

SAFES
*Goldie & McCulloch Co., Limited, Galt, Ont.
J. & J. Taylor, Ltd., Toronto.

SAMPLE CASES
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.
J. Eveleigh & Co., Ltd., Montreal.

SAND RAMMERS
*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

SANDPAPER
*Delany and Pettit, Ltd., Toronto.

SASH CORD, cotton
Hamilton Cotton Co., Hamilton, Ont.

SALT
Canadian Salt Co., Ltd., Windsor.

SANITARY PAPER TOWELS
*E. B. Eddy Co., Ltd., Hull, Que.

SAW SHARPENING MACHINERY
*Canadian Hart Wheels, Limited, Hamilton, Ont.

SAWS
*E. C. Atkins & Co., Ltd., Hamilton.
Henry Disston & Sons, Limited, Toronto.
Shurly & Deitrich, Galt, Ont.

SAWS, cross-cut and band
*Canada Machinery Corporation, Limited, Galt, Ont.
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
Shurly & Deitrich, Galt, Ont.

SAWS, circular mill
Shurly & Deitrich, Galt, Ont.

SAWS, hack
*Victor Saw Works, Ltd., Hamilton, Ont.

SAWS, of all kinds
Simonds Canada Saw Co., Limited, Montreal, Que.

SAWS, rip
*Canada Machinery Corporation, Limited, Galt, Ont.
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
Shurly & Deitrich, Galt, Ont.

SAWMILLS
G. & J. Esplen, Montreal, Que.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

SAW MILL MACHINERY
*Canadian Allis-Chalmers, Limited, Toronto.

SAWS, specialties
*Victor Saw Works, Ltd., Hamilton, Ont.

SCALES
*Canadian Fairbanks-Morse Company, Ltd., Montreal, Que.
The Gurney Scale Co., Hamilton.

SCALES, counter
The Gurney Scale Co., Hamilton.

SCALES, railway track, etc.
The Gurney Scale Co., Hamilton.

SCREENS
*Canada Wire & Iron Goods Co., Hamilton, Ont.

SCREEN DOORS AND WINDOWS
Sanderson-Harold Co., Ltd., Paris, Ham & Nott Co., Ltd., Brantford.

SCREWS
*John Morrow Screw & Nut Co., Ltd., Ingersoll, Ont.
*The National Acme Mfg. Co., Montreal, Que.
*The Steel Co. of Canada, Limited, Hamilton, Ont.
*Stowell Screw Co., Ltd., Montreal.
*United Brass & Lead, Ltd., Toronto

SCREW PLATES
*Butterfield & Co., Rock Island, P.Q.

SECURITIES, engraved
American Bank Note Co., Ottawa.

SERGES
Rosamond Woollen Co., Almonte.

SHAFTING
Canada Forge Co., Ltd., Welland.
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Canadian Drawn Steel Co., Ltd., Hamilton, Ont.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

- *Union Drawn Steel Co., Limited, Hamilton, Ont.
 *Dodge Mfg. Co., Ltd., Toronto.
SHANTY BLANKETS
 Slingsby Mfg. Co., Ltd., Brantford, SHAPERS
 *Canada Machinery Corporation, Limited, Galt, Ont.
 *P. B. Yates Machine Co., Ltd., Hamilton, Ont.
SHEAR BLADES, iron
 *Galt Knife Co., Ltd.
 The Peter Hay Knife Co., Limited, Galt, Ont.
SHEATHING
 *The Barrett Co., Ltd., Toronto and Montreal.
SHEATHING, asbestos corrugated
 *Eureka Mineral Wool & Asbestos Co., Toronto.
SHEET METAL STAMPINGS
 Acme Stamping & Tool Works, Ltd., Hamilton, Ont.
 *The Pedlar People Limited, Oshawa.
 *W. H. Banfield & Sons, Ltd., Toronto.
 *The A. B. Ormsby Co., Limited, Toronto.
SHEETS, ETC.
 *Tallman Brass & Metal Co., Hamilton, Ont.
SHEETS, galvanized
 *Dominion Sheet Metal Co., Ltd., Hamilton.
 *The Pedlar People Limited, Oshawa.
SHINGLES
 Bathurst Lumber Co., Ltd., Bathurst, N.B.
SHINGLE SAWS
 *E. C. Atkins & Co., Inc., Hamilton, Ont.
SHIP BUILDERS
 *Polson Iron Works, Limited, Toronto.
 J. & R. Weir, Montreal, Que.
SHIRTS
 John W. Peck & Co., Ltd., Montreal, Que.
SHIRTS, workmen's
 *A. R. Clarke & Co., Ltd., Toronto.
SHOE PEGWOOD
 O. Chalifour, Quebec, Que.
SHOE LININGS
 Galt Knitting Co., Ltd., Galt, Ont.
SHOES, running and athletic
 Ames-Holden-McCready, Ltd., Montreal, Que.
SHOOKS
 Barchard & Co., Ltd., Montreal.
SIGNAL CELLS
 Canadian National Carbon Co., Ltd., Toronto.
SILENT CHAIN DRIVES
 *Canadian Link-Belt Co., Toronto.
SILVER BULLION
 Coniagas Reduction Co., Ltd., St. Catharines, Ont.
SILVERSMITH
 Canadian Wm. A. Rogers, Ltd., Toronto.
 Standard Silver Co., Toronto.
SILVERWARE, sterling
 Roden Bros., Limited, Toronto.
SINKS, enamelled
 Amherst Foundry Co., Limited, Amherst, N.S.
SKATES, figure
 Canada Cycle and Motor Co., Ltd.
SKATES, genuine Acme
 Canada Cycle and Motor Co., Ltd., Toronto.
SKATES, hockey
 Canada Cycle and Motor Co., Ltd., Toronto.
SKATES, ice
 Canada Cycle and Motor Co., Ltd., Toronto.
SKATE SHARPENERS
 *Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
SKIIFES
 Peterboro Canoe Co., Ltd., Peterboro, Ont.
SKYLIGHTS
 *A. B. Ormsby Co., Ltd., Toronto.
 *The Pedlar People Limited, Oshawa.
SLEIGHS
 Tudhope-Anderson Co., Limited, Orillia, Ont.
SLIPPERS
 Ames-Holden-McCready, Ltd., Montreal, Que.
SLOTTERS
 *Canada Machinery Corporation, Limited, Galt, Ont.
SMELTER LINING
 *Beveridge Paper Co., Ltd., Montreal.
- SMOKE CONSUMERS**
 *The Jones Underfeed Stoker Co., Ltd., Toronto.
SMOKE-STACKS
 *Steel Trough and Machine Co., Ltd., Tweed, Ont.
SOAPS
 J. Barsalou & Co., Ltd., Montreal.
SOAP (soft, oil)
 The Imperial Varnish & Color Co., Ltd., Toronto.
 Sherwin-Williams Co. of Canada, Limited, Montreal, Que.
SOCKETS
 *Crouse-Hinds Co., Ltd., Toronto.
SODA WATER FOUNTAINS
 J. J. McLaughlin, Ltd., Toronto.
SODA WATER FOUNTAINS AND ACCESSORIES
 Fletcher Mfg. Co., Ltd., Toronto.
SOIL PIPE
 Anthes Foundry, Ltd., Toronto.
SOLDER
 Alonzo W. Spooner, Ltd., Port Hope, Ont.
 *Canada Metal Co., Toronto.
 *Tallman Brass & Metal Co., Hamilton, Ont.
SOLDER, silver
 Geo. H. Lees & Co., Hamilton.
SOLDER, wire and bar
 *American Can Co., Montreal, and Hamilton.
SOLDERING IRONS AND COPPERS
 Brown, Boggs Co., Ltd., Hamilton, Ont.
SNOWSHOES
 Holt, Renfrew, Ltd., Quebec, Que.
SPECIAL MACHINERY
 Globe Engineering Co., Ltd., Hamilton.
SPIKES, railway and marine
 Starr Mfg. Co., Ltd., Dartmouth, N.S.
SPIRAL CONVEYORS
 *Canadian Mathews Gravity Carrier Co., Ltd., Toronto.
 *The Goldie & McCulloch Co., Ltd., Galt, Ont.
SPLIT PEAS
 H. Murton, Ltd., Guelph, Ont.
SPIRITS
 *Hiram Walker & Sons, Limited, Walkerville, Ont.
SPORTING MEDALS AND TROPHIES
 Roden Bros., Limited, Toronto.
SPRAYERS
 Spramotor Co., London, Ont.
SPRING COTTERS
 *Richards-Wilcox Canadian Co., Limited, London, Ont.
SPRINGS
 *Canadian Steel Foundries, Ltd., Montreal, Que.
 B. J. Coghlin Co., Ltd., Montreal.
 Guelph Spring & Axle Co., Ltd., Guelph, Ont.
SPRINGS, carriage and automobile
 Guelph Spring & Axle Co., Ltd., Guelph, Ont.
SPRINKLER SYSTEMS
 *Chicago Bridge & Iron Works, Bridgeburg, Ont.
 *The Bennett & Wright Co., Ltd., Toronto, Ont.
 *Purdy, Manfell, Ltd., Toronto.
 *Vogel Co. of Canada, Ltd., Montreal, Que.
SPROCKET WHEELS
 *Canadian Link Belt Co., Ltd., Toronto.
STAINS
 R. C. Jamieson & Co., Ltd., Montreal, Que.
STAINS, creosote shingle
 A. Muirhead Co., Ltd., Toronto.
STAMPINGS
 *Dominion Forge and Stamping Co., Ltd., Walkerville, Ont.
STAMPS, steel, brass and rubber
 Pritchard-Andrews Co. of Ottawa, Ltd., Ottawa, Ont.
STAMP MILLS
 *Jenckes Machine Co., Sherbrooke.
STATIONERY, office
 Harris Lithographing Co., Toronto.
STEAM PIPE AND BOILER COVERINGS, asbestos
 *Eureka Mineral Wool & Asbestos Co., Toronto.
STEAM SHOVELS
 *M. Beatty & Sons, Ltd., Welland.
STEAM SPECIALTIES
 *C. A. Dunham Co., Ltd., Toronto.
 *Darling Bros., Ltd., Montreal.
 *Sheldons, Ltd., Galt.
- STEAM TRAPS**
 *C. A. Dunham Co., Ltd., Toronto.
 *Canadian Morehead Manufacturing Co., Limited, Woodstock.
STEEL
 *Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.
 *Burlington Steel Co., Ltd., Hamilton, Ont.
STEEL BILLETS AND BLOOMS
 *The Steel Company of Canada, Limited, Hamilton.
STEEL BUILDINGS
 *The Canadian Bridge Co., Ltd., Walkerville, Ont.
 *Dominion Bridge Co., Ltd., Montreal.
 *McGregor & McIntyre, Ltd., Toronto.
 *Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.
 *The Pedlar People Limited, Oshawa.
 *Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
 *The A. B. Ormsby Co., Limited, Toronto.
STEEL CABINETS
 J. & J. Taylor, Ltd., Toronto.
STEEL CASTINGS
 *Canadian Steel Foundries, Ltd., Montreal, Que.
 *Dominion Steel Foundry Co., Ltd., Hamilton.
STEEL DOORS, rolling
 *The A. B. Ormsby Co., Limited, Toronto.
STEEL FILING EQUIPMENT
 *Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
STEEL PLATE WORK
 *Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.
 *Toronto Iron Works, Ltd., Toronto.
STEEL RODS
 *The Steel Co. of Canada, Ltd., Hamilton.
STEEL SASH
 *Dennis Wire & Iron Works Co., London.
 *Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
 *The A. B. Ormsby Co., Limited, Toronto.
STEEL SHELVING
 *Dennis Wire & Iron Works Co., London.
STEEL WIRE RODS
 *The Steel Company of Canada, Limited, Hamilton.
STELLITE
 *Deloro Smelting & Refining Co., Ltd., Deloro and Toronto.
STENCILS, brass
 Pritchard-Andrews Co. of Ottawa, Ltd., Ottawa, Ont.
STEREOTYPING
 Central Press Agency, Toronto
STOKERS
 *The Jones Underfeed Stoker Co., Ltd., Toronto.
STOOLS AND BENCHES, piano and organ
 *Otterville Mfg. Co., Ltd., Otterville, Ont.
STOOLS, steel factory
 *Steel Trough and Machine Co., Ltd., Tweed, Ont.
STONE
 The Hagersville Contracting Co., Hagersville, Ont.
STONEWARE
 *Jas. W. Foley & Co., St. John, N.B.
STORAGE BATTERIES
 *Canadian General Electric Company, Ltd., Toronto.
STORE FITTINGS
 The Canadian Office & School Furniture Co., Ltd., Preston, Ont.
STOVES
 Smith Foundry Co., Ltd., Fredericton, N.B.
 Tudhope-Anderson Co., Limited, Orillia, Ont.
STOVE LININGS
 Standard Clay Products, Ltd., St. Johns, Que.
STOVES AND RANGES
 Lee Mfg. Co., Ltd., Pembroke, Ont.
 The Jas. Smart Mfg. Co., Ltd., Brockville, Ont.
 McClary Mfg. Co., London, Ont.
STRAWS, paper drinking
 Fletcher Mfg. Co., Ltd., Toronto.
STREET LIGHTING FIXTURES
 *Crouse-Hinds Co., Ltd., Toronto.
STRETCHERS, lace curtain
 *Otterville Mfg. Co., Ltd., Otterville, Ont.
- STRUCTURAL STEEL**
 *Canadian Allis-Chalmers, Limited, Toronto.
 *Dominion Bridge Co., Montreal.
 *Hamilton Bridge Works Co., Ltd., Hamilton.
 *Manitoba Bridge & Iron Works, Ltd., Winnipeg.
 *McGregor & McIntyre, Ltd., Toronto.
 *McKinnon Holmes & Co., Sherbrooke, P.Q.
 *The Canadian Bridge Co., Ltd., Walkerville, Ont.
SUIT CASES
 J. Eveleigh & Co., Ltd., Montreal.
 The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.
SUPPLY DEALERS
 *The Foundation Co., Limited, Montreal.
SURFACERS
 *Canada Machinery Corporation, Limited, Galt, Ont.
 *P. B. Yates Machine Co., Ltd., Hamilton, Ont.
SWITCHBOARDS
 *Canadian General Electric Company, Ltd., Toronto.
 *Crouse-Hinds Co., Ltd., Toronto.
SWITCHES
 *Crouse-Hinds Co., Ltd., Toronto.
SWITCHES, railway
 Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.
SWITCHES AND FROGS
 *Canadian Steel Foundries, Ltd., Montreal, Que.
SWITCH STANDS
 Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.
TABLE COVERS, chenille
 Hamilton Cotton Co., Hamilton, TANKS
 *Toronto Iron Works, Ltd., Toronto.
 *Chicago Bridge & Iron Works, Bridgeburg, Ont.
 Gould-Shapley-Muir Co., Ltd., Brantford, Ont.
 *McKinnon Holmes & Co., Sherbrooke, P.Q.
 *Ontario Wind Engine & Pump Co., Ltd., Toronto.
 *The Goldie & McCulloch Co., Ltd., Galt.
 *The Watrous Engine Works Co., Ltd., Brantford.
TANKS, steel storage
 *Mackinnon, Holmes & Co., Ltd., Sherbrooke, P.Q.
 *Steel Trough and Machine Co., Ltd., Tweed, Ont.
TANNERS' SUPPLIES
 McClary Mfg. Co., London, Ont.
TAPS
 *Butterfield & Co., Rock Island, P.Q.
 *Pratt & Whitney Co., Dundas.
TAPES, measuring
 The Lufkin Rule Co., of Canada, Ltd., Windsor, Ont.
TELEPHONE ACCESSORIES
 *Canadian Independent Telephone Co., Toronto.
 *Northern Electric Co., Limited, Montreal, Que.
TENTS
 Turner, J. J., & Sons, Peterboro.
 *Scythies & Co., Ltd., Toronto.
TERMINALS, electric cable
 *Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.
TERRA ALBA
 *Albert Mfg. Co., Hillsborough, N.B.
TERRA COTTA (architectural)
 Toronto Plate Glass Importing Co., Ltd., Toronto.
TEXTILE SUPPLIES (shuttles, bobbins, spools and picker sticks.)
 The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.
THUMB SCREWS
 *Canadian Billings & Spencer, Ltd., Welland.
TIE TAMPERS
 *Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.
TILING, rubber
 Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
 *Gutta Percha & Rubber, Ltd.
TIME RECORDERS
 *International Business Machines, Limited, Toronto.
TIRES, bicycle, auto, carriage, truck, motorcycle
 Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
 *Gutta Percha & Rubber, Ltd.

TOOLS, pneumatic

*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

TOOLS, track

B. J. Coghlin Co., Ltd., Hamilton.

TOOLS, sheet metal workers'

Brown, Boggs Co., Ltd., Hamilton.

TRACK, steel, portable

Hamman Steel Car and Engineering Works, Hamilton.

TRACTORS, kerosene and gasoline

*Gilson Manufacturing Co., Ltd., Guelph.

TRADE MARKS AND DESIGNS

Ridout & Maybee, Toronto.

TRANSFORMERS

*Canadian General Electric Company, Ltd., Toronto.

*The Canadian Crocker-Wheeler Co., Limited, St. Catharines.

TRANSLATIONS INTO FRENCH

Raoul Renault, Quebec City.

TRANSMISSION MACHINERY

*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.

*Canadian Link Belt Co., Toronto.

*Dodge Mfg. Co., Ltd., Toronto.

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

*The Watrous Engine Works Co., Ltd., Brantford.

TRAPS

*C. A. Dunham Co., Ltd., Toronto.

*Canadian Morehead Mfg. Co., Woodstock.

TROLLEYS

*Richard-Wilcox Canadian Co., Limited, London, Ont.

*Northern Crane Works, Limited, Walkerville.

TRUCKS

*Canadian Fairbanks-Morse Company, Ltd., Montreal, Que.

The Gurney Scale Co., Hamilton.

*Northern Crane Works, Limited, Walkerville.

TRUCKS, brick, tile and lumber

*Watrous Engine Works Co., Ltd., Brantford.

TRUCKS, fibre and reinforced

*Beveridge Paper Co., Limited, Montreal.

TRUCKS, motor

*National Steel Car Co., Limited, Hamilton.

TRUCKS, warehouse and factory

The W. S. Mahaffy Co., Toronto.

TRUCKS, steel, forge and foundry

Hamman Steel Car and Engineering Works, Hamilton.

TRUCKS FOR OFFICE AND VAULT USE

*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

TRUNKS

Lamontagne Ltd., Montreal, Que.

J. Eveleigh & Co., Ltd., Montreal.

The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.

TUBING, brass and copper

*Booth-Coulter Copper & Brass Co., Ltd., Toronto.

Canadian Seamless Wire Co., Toronto.

*Tallman Brass and Metal Co., Hamilton, Ont.

TUBING, Fibre

*Beveridge Paper Co., Limited, Montreal.

TUBING, gold and silver

Canadian Seamless Wire Co., Toronto.

TUBS, Ice cream

Fletcher Mfg. Co., Ltd., Toronto.

TUMBLERS, foundry

*Northern Crane Works, Limited, Walkerville.

*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

TURBINES, steam

*The Canadian Crocker-Wheeler Co., Limited, St. Catharines.

TURBINE PUMPS

*The Goldie & McCulloch Co., Limited, Galt, Ont.

TURPENTINE

*Brown Corporation, La. Tuque, Que.

TWEEDS

Rosamond Woollen Co., Almonte, Ont.

TWINES

*Doon Twines Ltd., Doon, Ont.

*Shurly & Derrett, Ltd., Toronto.

TWINES, binder

Brantford Cordage Co., Ltd., Brantford, Ont.

TWINES, cotton

Hamilton Cotton Co., Hamilton, Ont.

TWIST DRILLS

*John Morrow Screw and Nut Co., Ltd., Ingersoll.

*Pratt and Whitney Co., of Canada, Dundas, Ont.

*The Wilt Twist Drill Co., Ltd., Walkerville, Ont.

UNDERWEAR

Galt Knitting Co., Ltd., Galt, Ont.

UNDERWEAR, imperial

Kingston Hosiery Co., Ltd., Kingston, Ont.

UNIONS

*Dart Union Co., Ltd., Toronto.

*Otterville Mfg. Co., Ltd., Otterville, Ont.

UPHOLSTERED FURNITURE, leather and tapestries

Imperial Rattan Co., Ltd.

VALVES

*Canadian Fairbanks-Morse Company, Ltd., Montreal, Que.

*Jenkins Bros., Ltd., Montreal.

*Kerr Engine Co., Ltd., Walkerville.

T. McAvity & Sons, Ltd., St. John, N.B.

*Penberthy Injector Co., Ltd., Windsor.

VALVES, for steam and water

*Jenkins Bros., Ltd., Montreal.

*Mueller Mfg. Co., Ltd., Sarnia.

*Penberthy Injector Co., Ltd., Windsor.

*United Brass & Lead, Ltd., Toronto

VALVES, pressure reducing

*Mueller Mfg. Co., Ltd., Sarnia.

VALVES, regrinding globe, angle cross checks, swing checks

*Mueller Mfg. Co., Ltd., Sarnia.

Penberthy Injector Co., Ltd., Windsor, Ont.

VALVES, regulating

*Mueller Mfg. Co., Ltd., Sarnia.

VALVES, rubber

Dunlop Tire & Rubber Goods Co., Ltd., Toronto.

VARNISHES

*Ault & Wiborg Co. of Canada, Ltd., Toronto.

Berry Bros., Walkerville, Ont.

R. C. Jamieson & Co., Ltd., Montreal, Que.

VAULT FITTINGS, steel

*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

VAULTS AND VAULT DOORS

*The Goldie & McCulloch Co., Ltd., Galt.

J. & J. Taylor, Ltd., Toronto.

VENTILATING APPLIANCES

*Sheldons, Ltd., Galt.

VENTILATING SYSTEMS

Gurney Foundry Co., Ltd., Toronto

VENTILATORS

*A. B. Ormsby, Ltd., Toronto.

*The Pedlar People Limited, Oshawa.

VOLTMETERS AND AMMETERS

*Crouse-Hinds Co., Ltd., Toronto.

WAGONS

TudhopeAnderson Co., Ltd., Orillia

WALL COPING

Standard Clay Products, Ltd., St. Johns, Que.

WASHERS

*The Steel Company of Canada, Limited, Hamilton.

*United Brass & Lead, Ltd., Toronto

WASHERS, fibre

*Beveridge Paper Co., Limited, Montreal.

WASHERS, plate or wrought

London Rolling Mill Co., Ltd., London, Ont.

WASTE PAPER BASKETS AND ALL RECEPTACLES, fibre

*Beveridge Paper Co., Limited, Montreal.

WASTES, wool and cotton

Factory Waste and Metal Co., Montreal, Que.

*Scythes & Co., Ltd., Toronto.

WATERPROOF, cement coating

Benjamin Moore & Co., Ltd., Toronto.

*Beveridge Paper Co., Limited, Montreal.

*The Barrett Co., Ltd., Toronto and Montreal.

*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

WATER WHEELS

*Canadian Allis-Chalmers, Limited, Toronto.

WEBBING, elastic

Hamilton Cotton Co., Hamilton Ont.

WEBBING, non-elastic

Hamilton Cotton Co., Hamilton, Ont.

WELDING APPARATUS AND MATERIALS

*The Prest-O-Lite Company.

WELL-DIGGING TOOLS AND MACHINERY

*Ontario Wind Engine & Pump Co., Ltd., Toronto.

WHEELS

*Canadian Car & Foundry Co., Ltd., Montreal, Que.

WHEELS, corundum

*Canadian Hart Wheels, Ltd., Hamilton, Ont.

WHEELS, emery

*Canadian Hart Wheels, Ltd., Hamilton, Ont.

WHEELS, fibre

*Beveridge Paper Co., Limited, Montreal.

WHEELS, water (impulse type)

John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

WELL DRILLING TOOLS AND MACHINERY

Oil Well Supply Co., Ltd., Petrolia, Ont.

WHIPS AND LASHES

Lay Whip Co., Rock Island, Que.

WHITE ARSENIC

Coniagas Reduction Co., Ltd., St. Catharines, Ont.

WHITE LEAD

Brandram-Henderson, Ltd., Montreal, Que.

A. Ramsay & Son Co., Montreal, Que.

WINDMILLS

*Goold-Shapley-Muir Co., Limited, Brantford, Ont.

*Ontario Wind Engine & Pump Co., Ltd., Toronto.

WINDOW SHADES

Daly & Morin, Montreal, Que.

WIRE

*The Steel Company of Canada, Limited, Hamilton.

*Laidlaw Bale Tie Co., Ltd., Hamilton, Ont.

*Eugene F. Phillips, Electrical Works, Ltd., Montreal.

The Graham Nail Works, Toronto.

WIRE BALE TIES

*Laidlaw Bale Tie Co., Ltd., Hamilton, Ont.

WIRE CLOTH

*Canada Wire & Iron Goods Co., Hamilton.

C. H. Johnston & Sons, Ltd., Montreal, Que.

WIRE, feeder and trolley

*Eugene F. Phillips, Electrical Works, Ltd., Montreal.

*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

WIRE GUARDS

*Canada Wire & Iron Goods Co., Hamilton.

C. H. Johnston & Sons, Ltd., Montreal, Que.

WIRE, insulated electric

*Northern Electric Co., Limited, Montreal.

*Eugene F. Phillips, Electrical Works, Ltd., Montreal.

*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

WIRE, weatherproof

*Northern Electric Co., Limited, Montreal.

*Eugene F. Phillips, Electrical Works, Ltd., Montreal.

*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

WIRE ROPE

*Dominion Wire Rope Co., Ltd., Montreal.

*The B. Greening Wire Co., Ltd., Hamilton.

WIRE WORK

C. H. Johnson & Sons, Ltd., Montreal, Que.

*Canada Wire & Iron Goods Co., Hamilton.

*The Geo. B. Meadows, Toronto, Iron and Brass Goods Works Co., Ltd., Toronto.

WIRING DEVICES

*Crouse-Hinds Co., Ltd., Toronto.

WOOD

Standard Fuel Co., Toronto.

WOOD BORERS

*Canada Machinery Corporation, Limited, Galt, Ont.

*Canadian Ingersoll-Rand Co., Ltd., Montreal, Que.

WOOD PRINTERS

Barchard & Co., Ltd., Toronto.

WOOD PULP, mechanical

La Cie de Pulpe de Chicoutimi, Chicoutimi, Que.

WOOD SHOP, general work

*Canadian Rumely Co., Limited, Toronto, Ont.

WOOD SPLIT PULLEYS

*Dodge Mfg. Co., Ltd., Toronto.

*The Goldie & McCulloch Co., Ltd., Galt, Ont.

WOOD STAVE PIPE

T. A. Morrison & Co., Montreal.

WOOL

*H. V. Andrews, Toronto.

WORSTED COATINGS AND SUITINGS

Rosamond Woollen Co., Almonte, Ont.

WRAPPERS, book, bottle, etc.

*The Thompson & Norris Co., of Canada, Ltd., Niagara Falls, Ont.

WRAPPERS, waterproof paper and twine reinforced

*Beveridge Paper Co., Limited, Montreal.

WROUGHT IRON PIPE

*The Steel Company of Canada, Ltd., Hamilton.

WROUGHT PIPE

*The Steel Company of Canada, Ltd., Hamilton.

YARNS, cotton

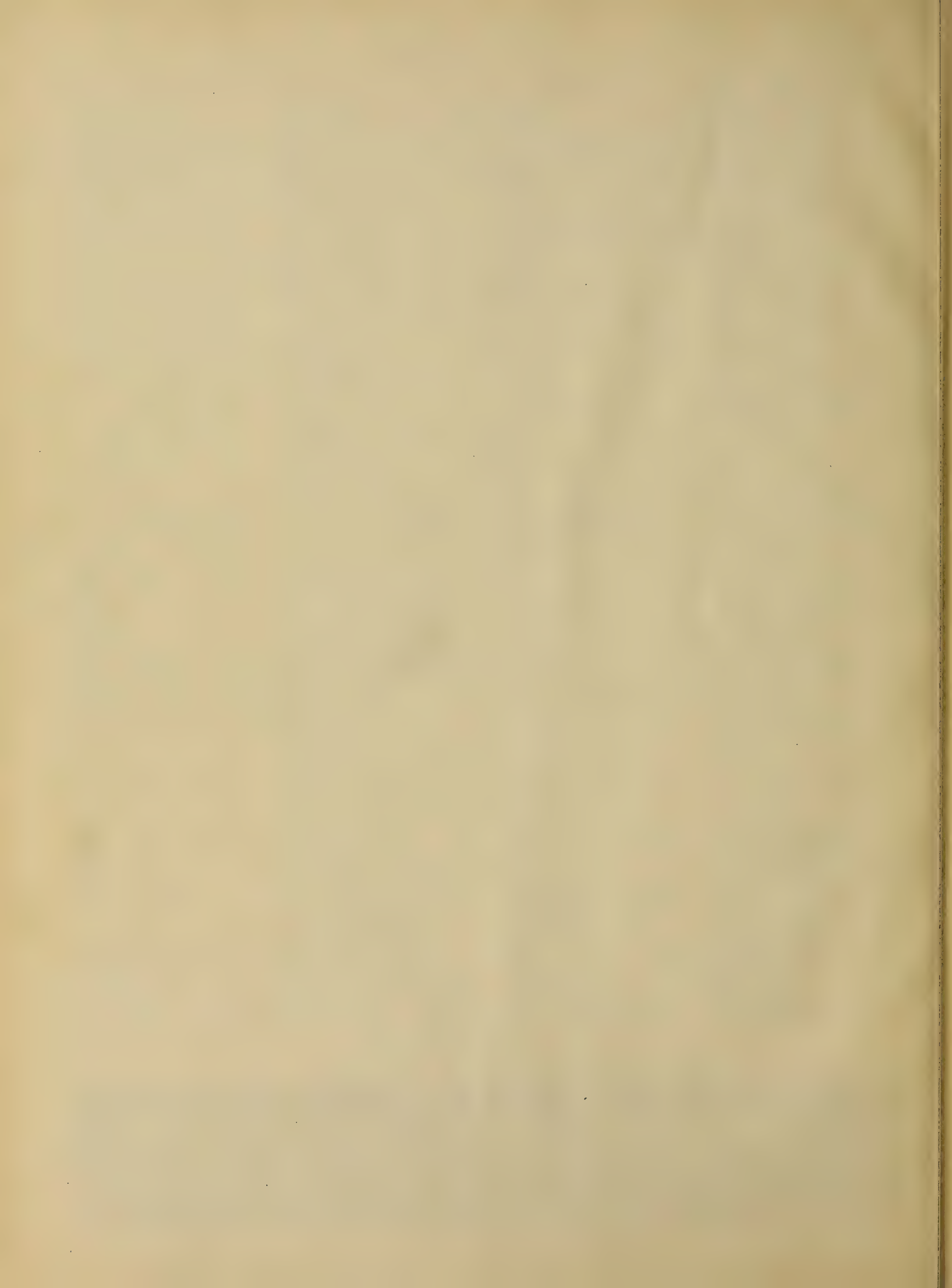
Hamilton Cotton Co., Hamilton, Ont.

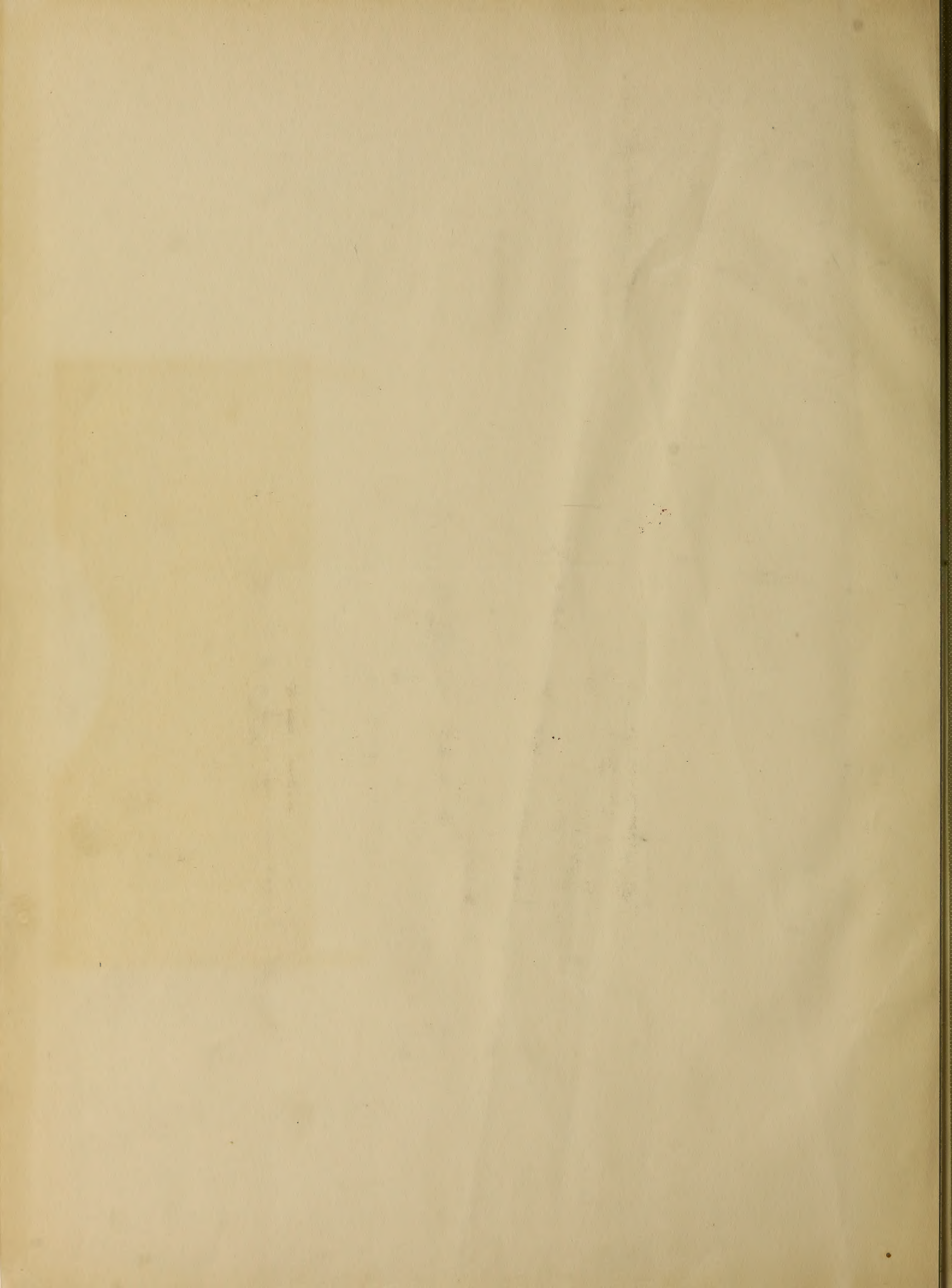
ZINC, electrical

*The Canada Metal Co., Toronto.

* For Display Advertisement see Index, Pages 1-2

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